PACIFIC PULP & PAPER INDUSTRY

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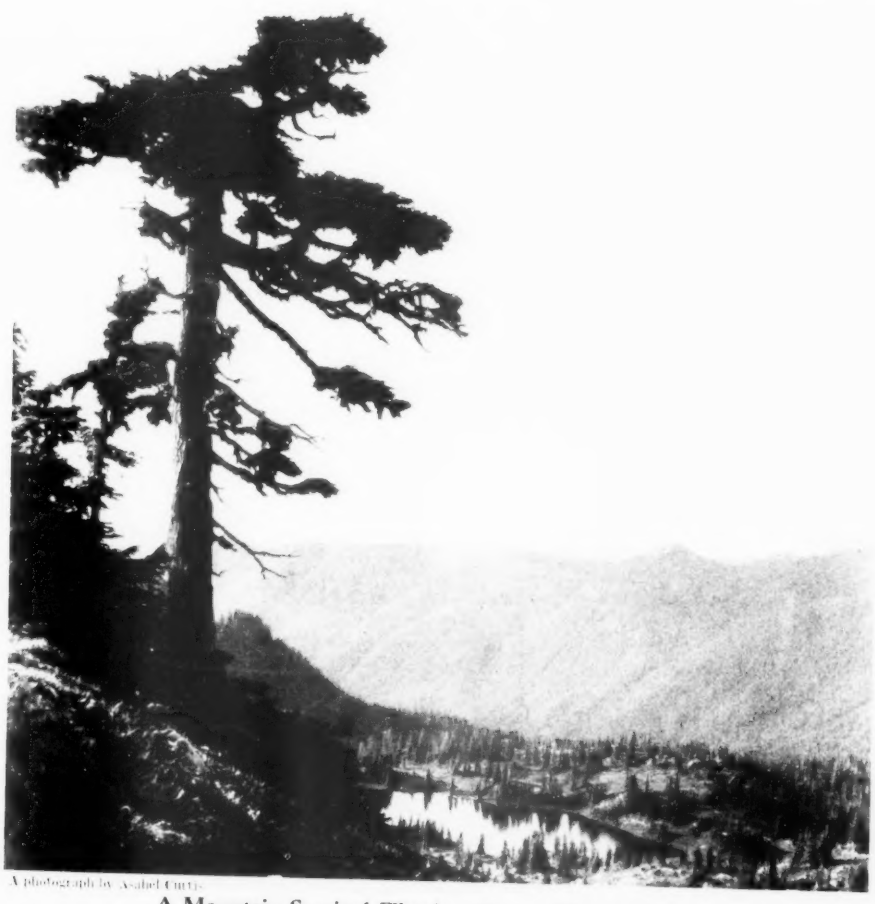


A photograph by Ansel Curtis

A Mountain Sentinel Watches Over a Western Forest

JUNE + 1931

LIQUID CHLORINE

TACOMA ELECTROCHEMICAL CO.
KEYSTONE BRAND
TACOMA, WASH.
SUBSIDIARY PENNSYLVANIA SALT MFG. COMPANY

ACIDS
ALUMS
ALUMINAS
CAUSTIC SODA
LIQUID CHLORINE
BLEACHING POWDER
GREENLAND KRYOLITH
SODIUM HYPOCHLORITE
AMMONIUM PERSULPHATE

THE distributing facilities of the Pennsylvania Salt Manufacturing Company besides being nation wide are highly specialized. Tank car equipment and containers are maintained in perfect condition to assure prompt service and safety to customers.

Liquid Chlorine and Caustic Soda are available the country over on short notice due to the strategic location of Penn Salt plants.

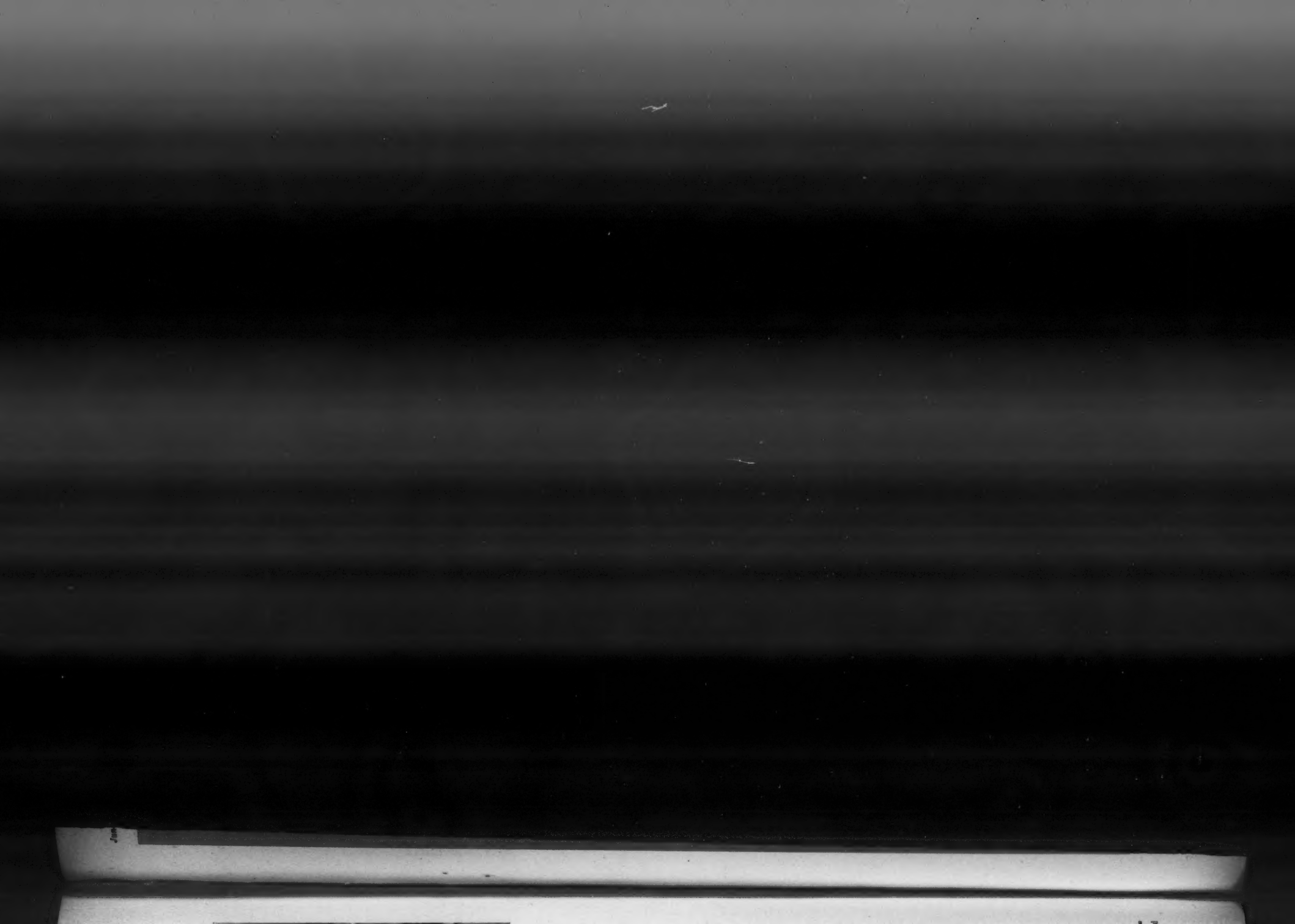
The carefully developed qualities of service which the Pennsylvania Salt Manufacturing Company has fostered have been added to the high quality of Tacoma Electrochemical Company Liquid Chlorine and Caustic Soda.

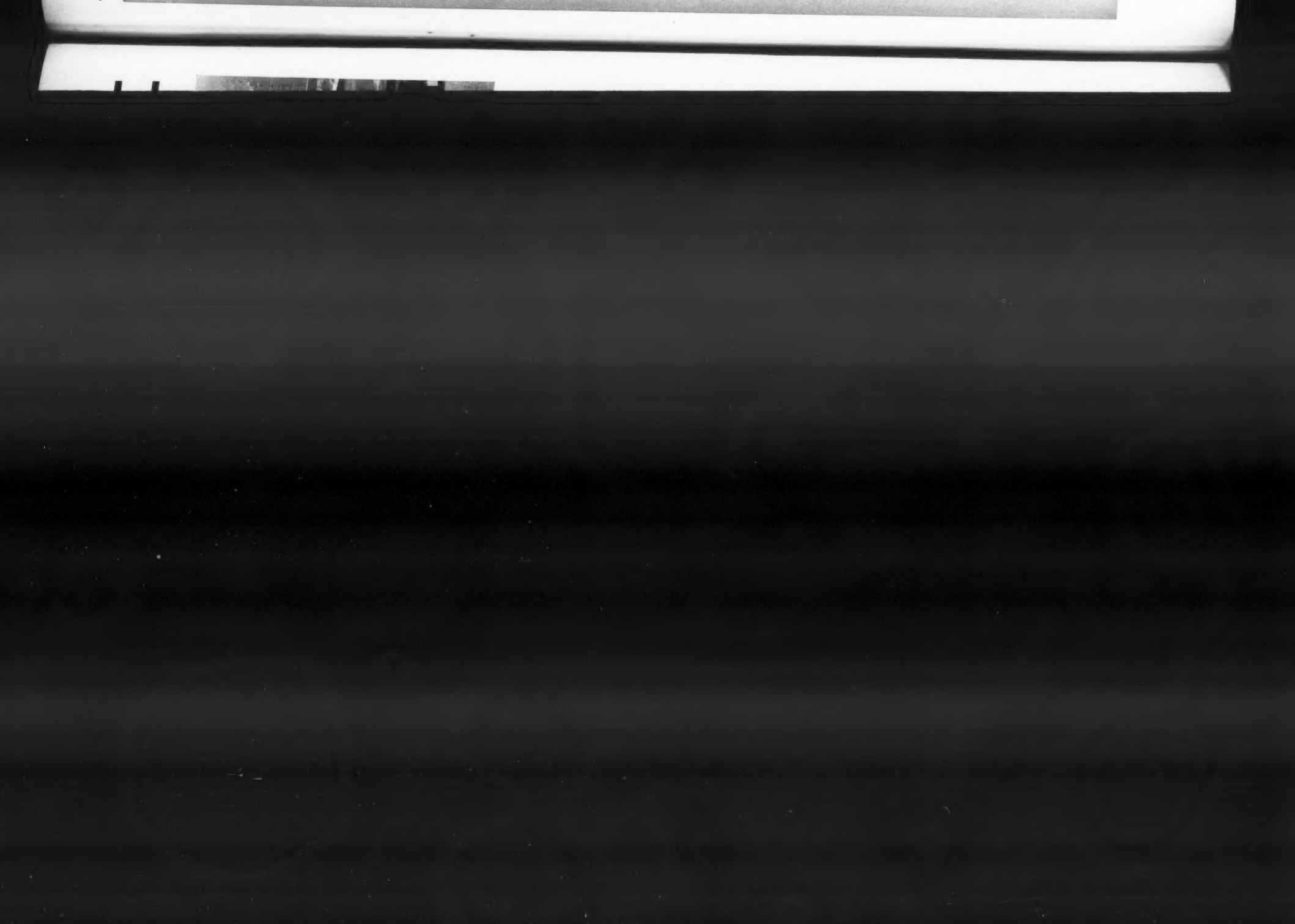
TACOMA ELECTROCHEMICAL COMPANY

TACOMA, WASHINGTON

WESTERN DIVISION OF PENNSYLVANIA SALT MANUFACTURING CO.

Pacific Pulp & Paper Industry is published once a month—except in March, when publication is semi-monthly—at 71 Columbia St., Seattle, Wash. Subscription: U. S. and Canada, $4.00; other countries, $5.00. Entered as second class matter May 20, 1927, at the Postoffice at Seattle, under the Act of March 3, 1879.





Speed up your machine with SUCTION COUCH ROLLS

BELOIT Suction Couch Rolls equipped with specially designed heavy-duty roller bearings, operate smoothly and efficiently. They help to speed up your machine considerably in making paper. A High-speed machine demands this service. An old machine instantly takes on new life and vigor. The cantilever feature greatly simplifies installing new wires and eliminates the danger of damaging the wire as well as saving time and labor. Their ability to speed up your production is but one of many distinct advantages that come to you with this remarkable improvement in paper-making progress.

\+ + +

New Beloit Suction Roll Book Gives Complete Details

In order that you may become acquainted with the many advantages of modern suction rolls, it will pay you to have a copy of our new Suction Roll book. Send for it now.

The *Beloit* Way is the *Modern* Way

BELOIT IRON WORKS, BELOIT, WIS., U. S. A.

The BELOIT

BALANCED CLOTHING MEANS MORE AND BETTER SERVICE FROM KENWOOD FELTS

Where tops, bottoms and press felts are related—built specifically to operate one with the other—the resulting teamwork provides new production efficiency. This relating of all felts on the machine, wets and presses, is sound practice, assuring maximum results from your Kenwood Tanned Board Felts. Kenwood Felts today provide new strength, increased openness, superior surface and longer life, all of which are reflected in lower felt cost per ton.

Kenwood pioneered the one-sided board felt. The same research service developed and perfected the patented Kenwood Tanning Processes which protect the felt from the deteriorating effects of acids. A third major development is found in the new method of yarn construction which, while adding nothing to the size or weight of the yarn, provides definite advantages both in strength and increased openness.

KENWOOD WOOL PRODUCTS

This progressive, scientific development of Kenwood Tanned Felts assures a constant standard of quality and steady improvement in felt performance.

F. C. HUYCK & SONS

KENWOOD MILLS, ALBANY, N. Y.

KENWOOD MILLS LTD., ARNPRIOR, ONTARIO, CANADA

KENWOOD FELTS

When writing F. C. HUYCK & SONS, *please mention* PACIFIC PULP AND PAPER INDUSTRY.

Blow No. 1 Stock *with* *Tycos* Instruments

PROPER control of the two elements necessary to assure the highest grade and quantity of No. 1 Stock . . . temperature and pressure . . . is possible through the use of *Tycos* Recording Thermometers, and Pressure Gauges, which give accurate records of these two variables at different points in the digester.

Tycos Bi-Record Recording Thermometers, developed for this application and used in many of the largest sulphite pulp mills in the United States and Canada, are specially designed to furnish the digester cook with records that enable him to produce the highest possible uniformity in character of stock.

Tycos Recording Pressure Gauges may be had as separate instruments or in combination with single or double-record *Tycos* Recording Thermometers.

The contents of a digester are too valuable to take chances. Remove the guesswork from your cooking. Wrtie today for the *Tycos* Pulp and Paper Catalog.

Tycos Combined Recording Thermometers and Pressure Gauges on Digesters.

Taylor Instrument Companies
Rochester, N. Y., U. S. A.

IN CANADA
Taylor Instrument Companies
OF CANADA, LTD., TORONTO

MANUFACTURING DISTRIBUTORS
IN GREAT BRITAIN
SHORT & MASON, LTD., LONDON, E-17

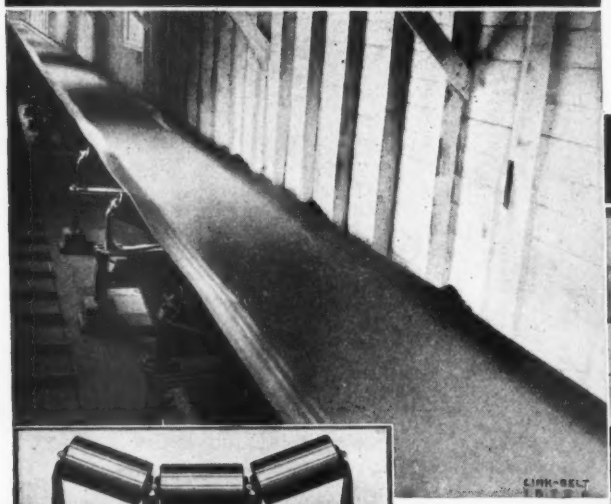
TYCOS Temperature Instruments

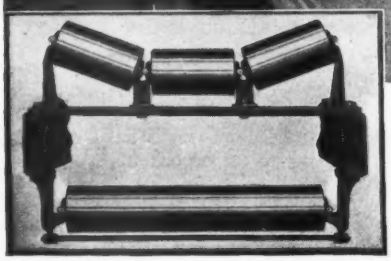
INDICATING - RECORDING - CONTROLLING

When writing TAYLOR INSTRUMENT COMPANIES *please mention* PACIFIC PULP AND PAPER INDUSTRY.

Handling Hogged Fuel and Chips Economically with LINK-BELT Belt Conveyors

HOGGED FUEL



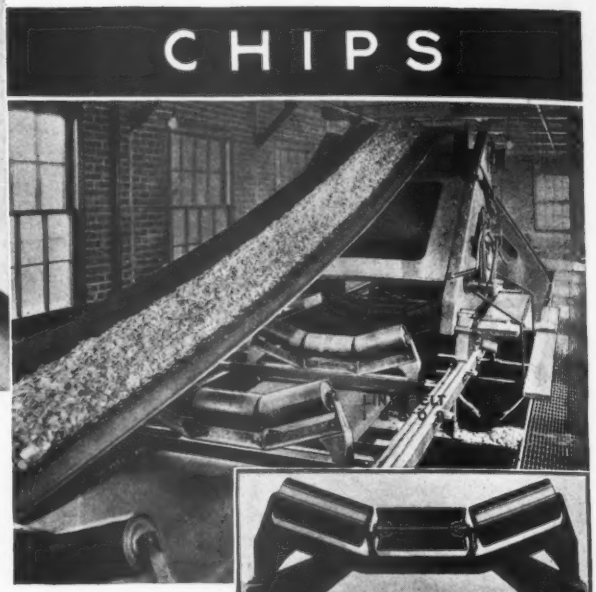


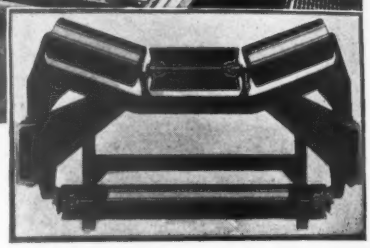
Above: Shows Type 52 Link-Belt Ball-Bearing Belt Conveyor for handling hogged fuel.

Right: Link-Belt Type 40 Timken Anti-Friction Belt Conveyor and Automatic Tripper handling chips.

Above: Type 52 Link-Belt Ball-Bearing Belt Conveyor Idler for handling materials weighing 50 pounds per cubic foot or less.

CHIPS





Right: Type 40 Timken Anti-Friction Idler, manufactured to the closest tolerances ever attempted. Features: Timken Bearings, grease seals, and machined rolls.

THE number of mills using Link-Belt Belt Conveyors for economically handling both hogged fuel and chips, shows that Link-Belt equipment has amply proved its efficiency in this important service.

Link-Belt builds an approved type of elevator, conveyor and positive drive for every class of service. With the knowledge gained through years of contact with the industry, Link-Belt engineers can therefore render valuable assistance in the selection of the best equipment for any requirement.

Send for a copy of the Belt Conveyor Data Book No. 1615 and General Catalog No. 500.

Pacific Division, Saw Mill

LINK-BELT COMPANY

Leading Manufacturers of Equipment for Handling Materials Mechanically and for the Positive Transmission of Power

CHICAGO, 300 W. Pershing Road — INDIANAPOLIS, 200 S. Belmont Avenue — PHILADELPHIA, 2045 W. Hunting Park Avenue

LINK-BELT COMPANY, PACIFIC DIVISION

San Francisco, 400 Paul Avenue — Los Angeles, 361 S. Anderson St. — Seattle, 820 First Ave., S. — Portland, Ore., 67 Front St. — Oakland, 526 Third St.

Bellingham, Wash. - - - - Northwest Hardware Co.
Everett, Wash. - - - - - - Agnew Hardware Co.
Hoquiam, Wash. - - - Lamb-Grays Harbor Company
Klamath Falls, Ore. - - - - - - - - - - Lorens Co.
Sedro-Woolley, Wash. - - Skagit Steel and Iron Works
Spokane, Wash. - - - - - - - - Union Iron Works
Vancouver, B. C. - - - - - - - Link-Belt Limited
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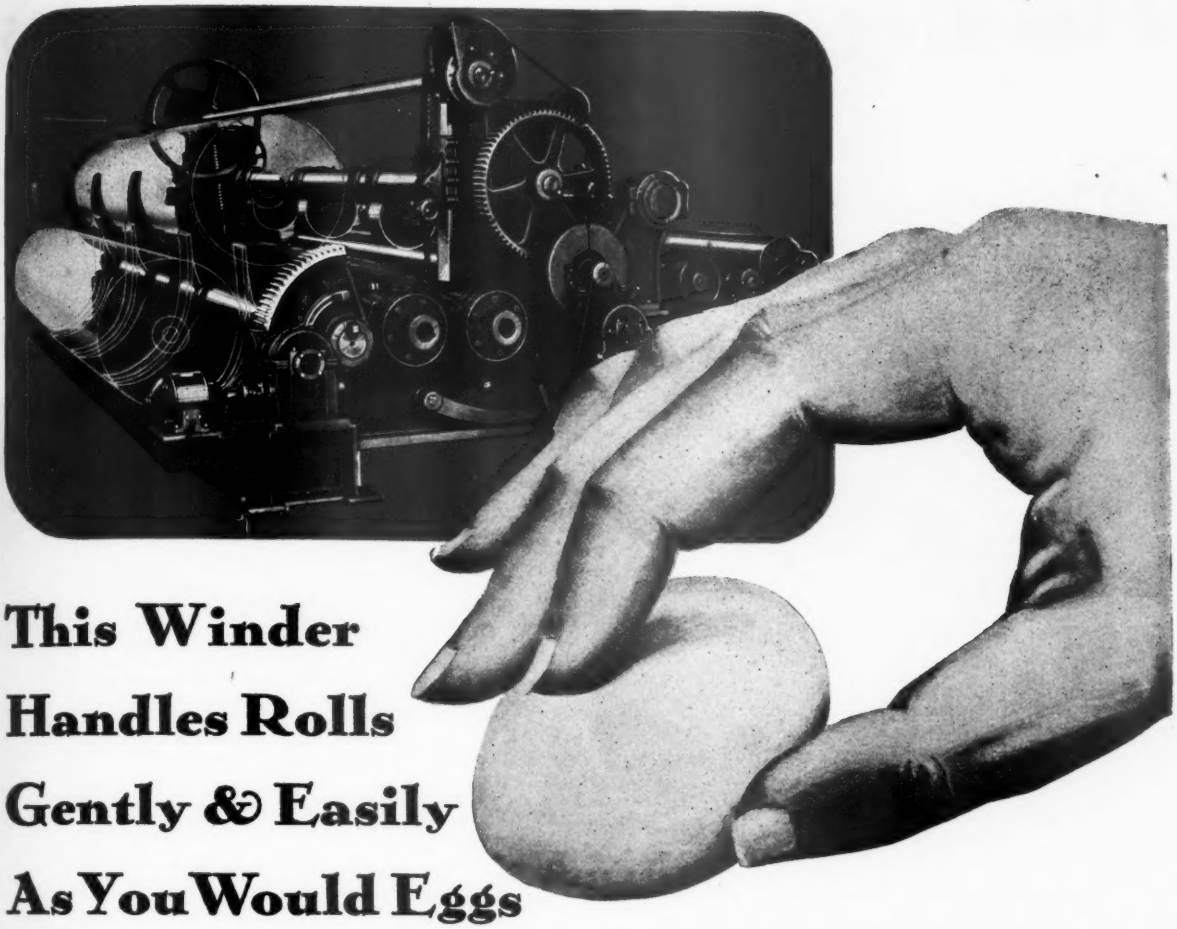
LINK-BELT

When writing LINK BELT CO., *please mention* PACIFIC PULP AND PAPER INDUSTRY.



This Winder Handles Rolls Gently & Easily As You Would Eggs

But lifting the finished roll from the drums and depositing it gently . . . and entirely automatically . . . on floor or truck is but one of the many accomplishments of this masterful winder. An important one, though, for it does away entirely with damaged rolls, sprung shafts, excessive handling time and strained backs.

As fast as the speediest machine reels off its web of paper, the improved Bagley & Sewall Winder spins it into *perfect* rolls,—clean-cut, non-telescopic, without wrinkles or splits,— uniform and tight from core to final lap. Self-adjusting drums automatically maintain correct tension at all stages of roll formation, without the slightest attention.

Dynamic balance, compensating counter balance, anti-friction bearings, vibrationless frames, finger-tip control, automatic delivery . . . all combine to make this the winder you need to supplement efficient machine performance . . . to make production truly modern . . . and economical.

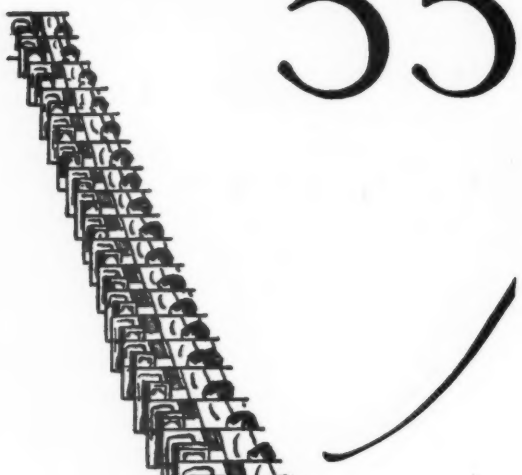
We'd like to tell you ALL about it . . . write us.

The Bagley & Sewall Co.

Watertown, N. Y.

64

35 *of 'em*



THE latest 35 Paper Machines installed in Canada have been equipped with Foxboro Automatic Paper Drying Controllers. This is another illustration of Foxboro's service to the pulp and paper industry.

Here are some of the advantages of Foxboro Automatic Control:

«« It maintains uniform drying temperature whether paper is passing over the roll or not. No worry about overheated rolls when the paper breaks—no waiting for the dryers to come up to temperature—every variation is corrected the instant it occurs.

«« Its simplicity and flexibility permit it to be set immediately for any change in drying conditions.

«« It can be used in conjunction with live steam, exhaust steam, or both. The Duplex Controller handles both exhaust and live steam—the live steam valve is opened only when necessary.

«« Good drying is assured with either saturated or super-heated steam.

«« Fluctuating back pressures on turbines are eliminated.

«« It can usually be applied to operate motor valves already installed.

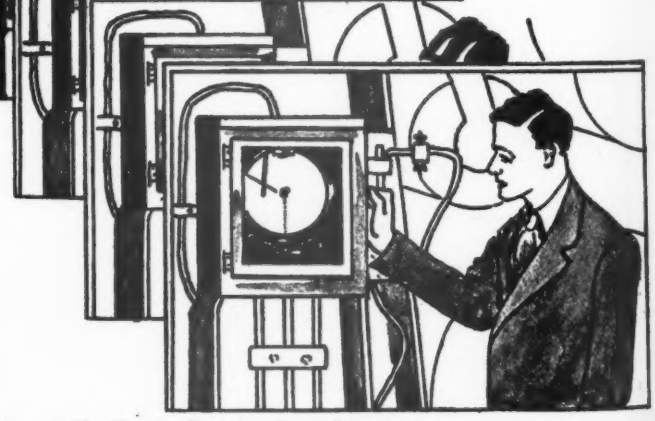
«« Its extreme sensitivity to changing conditions.

«« Its instantaeous and accurate control.

«« Its continuous record of drying operation.

We shall be glad to send a Foxboro Duplex Recorder-Controller on a trial basis. Write now to Dept. P. C. for information.

From Pulp to Finished Product, it will pay you to investigate the benefits of Foxboro Control.



THE FOXBORO COMPANY

Neponset Ave., Foxboro, Mass., U.S.A.

WESTERN OFFICES:
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San Francisco, 461 Market Street
Portland, Ore., 816 Lewis Building

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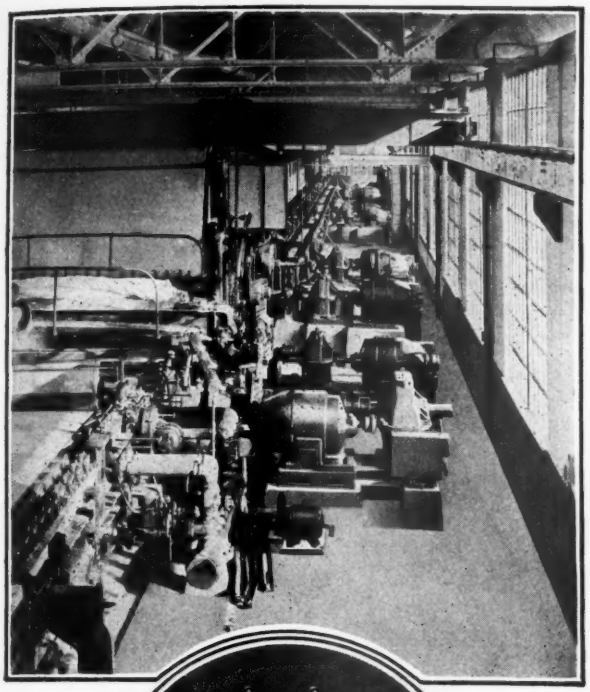
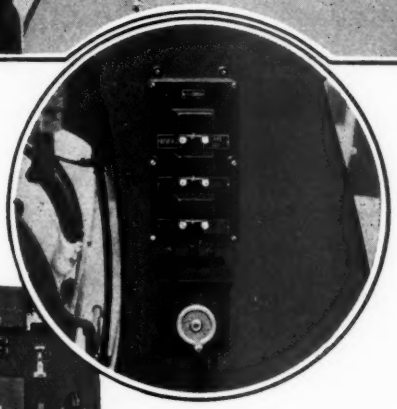
FOXBORO

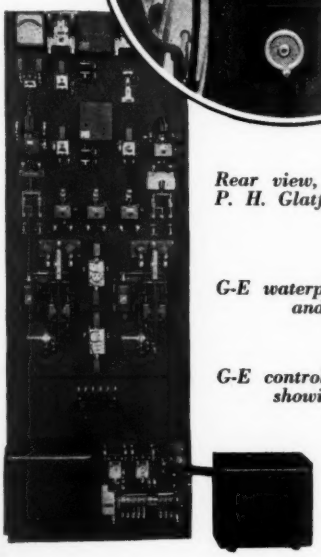
REG. U. S. PAT. OFF.

THE COMPASS OF INDUSTRY

Something New in Sectional Drives







Selsyn Control

The G-E sectional drive recently supplied for the 190-inch, 840-feet-per-minute paper machine of the P. H. Glatfelter Company, Spring Grove, Pa., combines new features of utmost importance to paper-mill engineers.

1. A new *compensated Selsyn* type of speed regulator of great simplicity and extreme sensitivity is employed, giving uniform speed of response at either high or low machine speeds.

2. By the use of Selsyn equipment, draw changes can be made from the front of the machine simply by turning a handwheel. One turn of the wheel always represents a definite change in draw.

3. All speed regulators are mounted on control panels instead of in the paper-machine room.

4. Independent generators for dryer and calender motors provide maximum flexibility in starting and operation. Dryers and calenders can be started with no disturbance of the couch. Also, any number of sections can be started simultaneously.

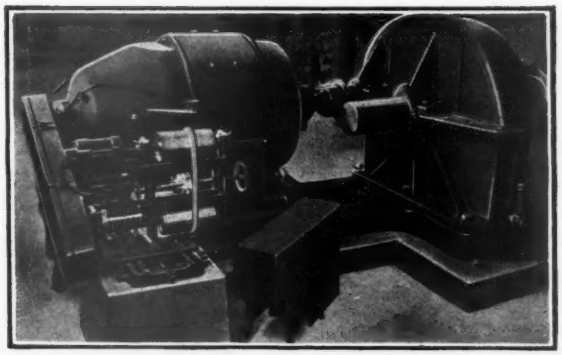
If it's a problem of electric drive—whether for paper machine or auxiliary pump—take it up with the nearest G-E office. G-E specialists will gladly coöperate with you in obtaining a solution.

Join us in the General Electric program, broadcast every Saturday evening on a nation-wide N. B. C. network

Rear view, 190-inch paper machine, P. H. Glatfelter Co., showing drive units

G-E waterproof push-button station and draw handwheel

G-E control panel for two sections showing speed regulators

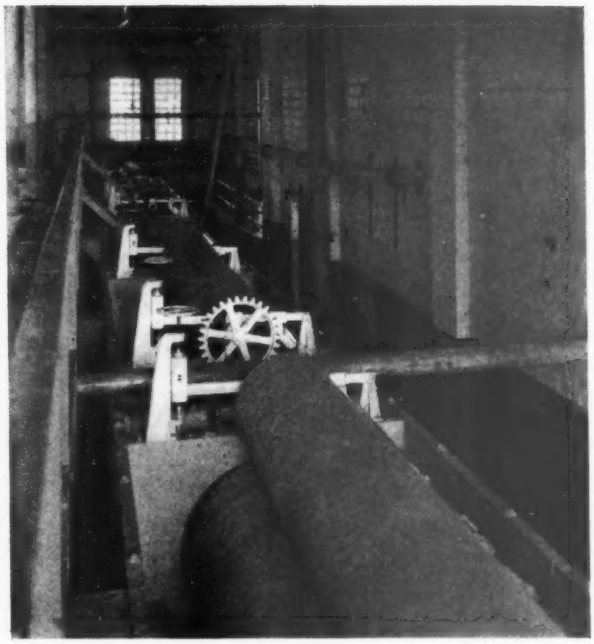


G-E motor and gear unit for driving dryer section showing transmitting Selsyn and cone pulleys with cover removed

237-49

GENERAL ELECTRIC

SALES AND ENGINEERING SERVICE IN PRINCIPAL CITIES



SULPHITE THICKENERS 48″ x 132″ bronze fitted installed in prominent high grade sulphite mill. Low power consumption, taking stock in any consistency and thickening it up to 10%. Felt or rubber couch rolls gear driven.

Improved Paper Machinery Corporation

NASHUA, NEW HAMPSHIRE

SHERBROOKE MACHINERIES LIMITED
Sherbrooke, Quebec, Canada

Save-alls	*Centrifugal Screens*	*Reclaimers*
Thickeners	*Reed-Spafford Screens*	*Washing Machines*
Filters	*Tailing Screeners*	*Special Machines*
Knotters	*Screen Plates*	*Cylinder Moulds*
Deckers	*Couch Rolls*	*Repair Parts*

When writing IMPROVED PAPER MACHINERY CORP., *please mention* PACIFIC PULP AND PAPER INDUSTRY.

LIQUID

HOOKER ELECTROCHEMICAL CO

PROMPT AND EFFICIENT SERVICE
FROM OUR MODERN, CONVENIENT
PLANT AT TACOMA, WASHINGTON

HOOKER ELECTROCHEMICAL COMPANY

WESTERN
PLANT—TACOMA, WASH.
SALES OFFICE: TACOMA, WASH.

EASTERN
PLANT—NIAGARA FALLS, N. Y.
SALES OFFICE: 60 EAST 42ND ST., N.Y.

CHLORINE

5508

Some Saving!

THE Hammermill Paper Company of Erie, Pa., in operating the Oliver United Save-All has proved its great value.

As an example, take the operating records of last December:

Av. Stock in White Water	5.02 lbs. per 1000 gals.
Av. Stock in Save-All Filtrate	0.41 lbs. per 1000 gals.
Stock Saved	4.61 lbs. per 1000 gals.
Filtrate Re-used on Showers	70%
Making a Total Fiber Saving of	97.5%

Since this saving is on bond stock and from a machine making 35 to 40 tons a day, naturally the user is well pleased with the Oliver United Save-All and considers the investment in the equipment well worth while. And incidentally, a short while ago this company ordered three more Oliver United Save-Alls of similar size.

No paper mill can afford to lose stock in its white water or allow the stock to pass into the lake or river. Every mill needs the Oliver United Save-All.

AGENTS

TIMMINS, ONTARIO
D. B. Kelly

HALLE, GERMANY
Wilhelm Lill

SCHEVENINGEN, HOLLAND, and SOERABAIA, JAVA
Van Lelyveld & Co.

RECIFE, BRAZIL
Ayres & Son

JOHANNESBURG
E. L. Bateman (Pty.) Ltd.

OLIVER UNITED FILTERS INC.

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Federal Reserve Bank Building

NEW YORK
33 W. 42nd Street

CHICAGO
565 Washington Blvd.

LONDON, W. C. 1
150 Southampton Row

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T. L. Genter, Concessionaire, 63 Avenue des Champs Elysées

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Oakland, Calif., Hazleton, Penna., Peterboro, England
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TOKYO
American Trading Co., Inc.

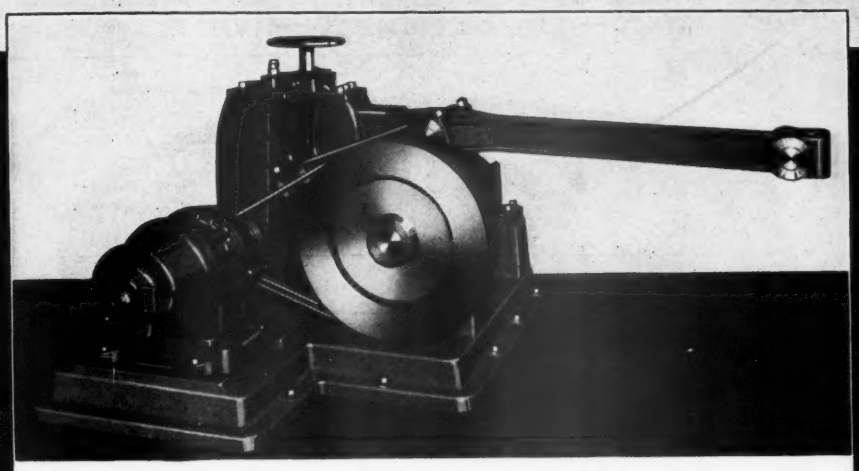
MELBOURNE
Fyvie & Stewart

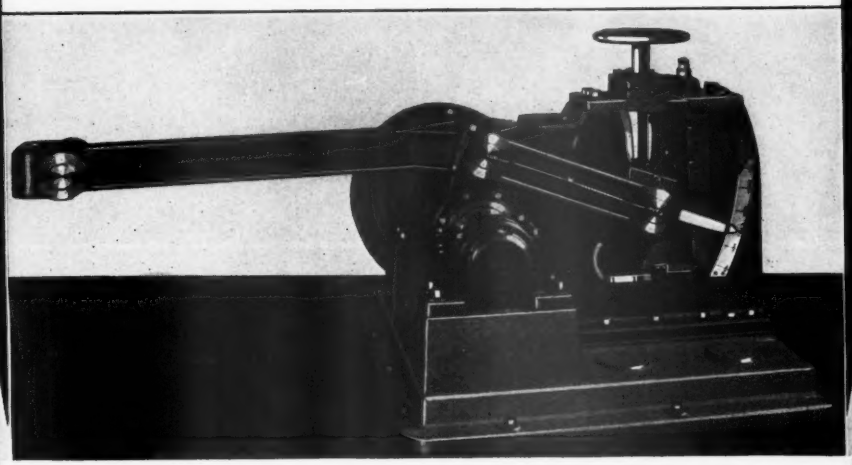
HONOLULU
W. A. Ramsay Co.

MANILA
The Edward J. Nell Co.

STOCKHOLM, SWEDEN
T. An Teach

Change the speed — change the stroke easily while running





The new Rice Barton Shake Head is built to run for years. Anti-friction throughout. The ideal installation for old as well as new machines.

PATENT APPLIED FOR

RICE, BARTON & FALES

INCORPORATED

WORCESTER, MASSACHUSETTS, U. S. A.

Paper Making Machinery Since 1837

When writing to RICE, BARTON & FALES, INC., *please mention* PACIFIC PULP AND PAPER INDUSTRY

PAPER MILL MACHINERY

FOURDRINIER—CYLINDER—WET MACHINES

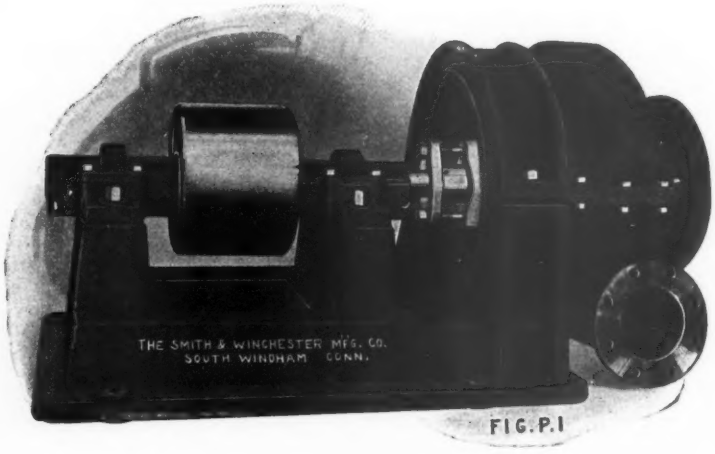
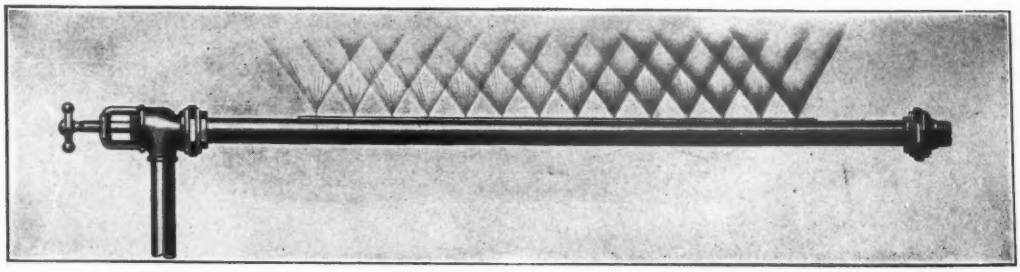


FIG. P.1

The Undercut Trimmer

PAPER BAG MAKING MACHINERY



The Rainstorm Shower Pipe

—ESTABLISHED 1828—

The Smith & Winchester Mfg. Co.

Dept. MFP. SOUTH WINDHAM, CONN.

WILLIAMS STANDARD PAPER MOISTURE TESTER

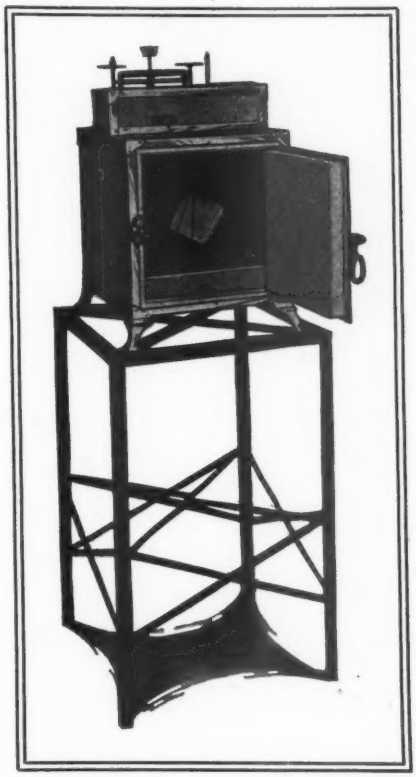
An Accurate Moisture Test of Your Paper in Ten Minutes

One Paper Company Has Bought 21 for Their Various Mills

Moisture tests can be made in your Machine Room by your Machine Tenders.

No calculations required. Accurate to .1 of 1%.

Tests all kinds of paper from tissue to board.



Hot samples weighed without removal from oven. No chance for moisture absorption during weighing.

Double-walled electric drying oven, with thermostat control.

Accurate scales with non-rusting agate bearings and beam graduated to read percent moisture directly.

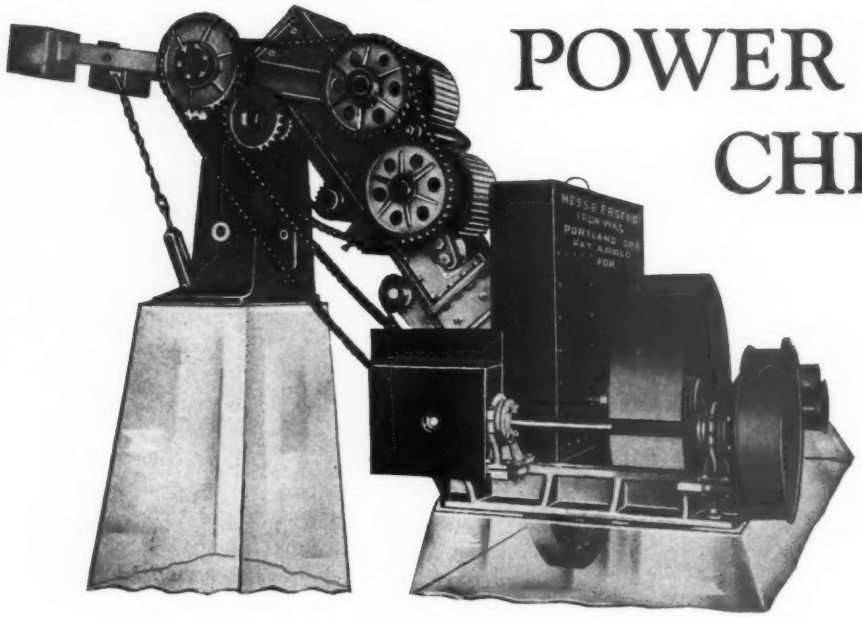
Over-dried Paper Costs You More Dollars Per Ton and Dissatisfied Customers

WILLIAMS APPARATUS COMPANY

WATERTOWN, N. Y.

When writing to WILLIAMS APPARATUS CO. *please mention* PACIFIC PULP AND PAPER INDUSTRY

The NEW H-E POWER FEED CHIPPER



The new HESSE-ERSTED Power Feed Chipper has proved successful in reducing the cost of making chips from slab wood, round wood, split wood or from short box waste.

Due to the even power feed, the H-E Chipper has greater capacity per horsepower.

It produces more uniform chips with fewer oversize.

Slivers and sawdust are materially reduced..

This Letter tells the story

Indirect savings are no less important. The uniformity of chips produced by the H-E Power Feed Chipper and the reduction of slivers and sawdust over the usual chipping operation, enables the filling of digesters with more actual pulp producing wood.

SHAFFER BOX COMPANY
MANUFACTURER AND EXPORTER
BOX SHOOK — SULPHITE WOOD PULP
TACOMA, WASHINGTON, U.S.A.

May 11, 1931

Hesse-Ersted Iron Works,
460-474 East Taylor St.,
Portland, Oregon.

ATTENTION MR. H. S. MITCHELL

Gentlemen:

In accordance with our agreement, after giving your Power Feed Chipper a 90-day trial in our Wood Room, this is to confirm our acceptance and payment of the machine.

We are very pleased to advise that the new Power Feed Chipper has improved our production of chips very much by an increase in capacity, a more even length of chip and a material decrease in over-sized cards, slivers and sawdust. We feel, therefore, that we can recommend this unit as doing all you claim for it.

With kindest regards,

Very truly yours,

B. H. Pangborn — Vice-President

J/H

HESSE-ERSTED IRON WORKS
PORTLAND, OREGON

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The Relation of Wood Pulp

industrial development on the Pacific Coast

to National Timber Conservation

The following text discusses the Pacific Coast pulp and paper industry in its relation to the future national safeguarding and development of an economical supply of chemical pulp, together with the possibilities of eliminating a national loss of timber waste and converting it into an economic aid to the forest industries of the United States. A Timber Conservation Board, appointed by The President to discuss affairs of national economy falling within the scope suggested by the title of the group, met in Washington, D. C., on June 11 and 12. Seven prominent executives of the nation's pulp and paper industry were requested to appear in behalf of their phase of the forest industries. Mr. Ossian Anderson, president of the Puget Sound Pulp & Timber Company, who was the only Pacific Coast man in the pulp and paper group, delivered the following prepared address. The thoughts presented are commended for earnest study by all who are interested in seeing maximum benefits accrue to the nation at large from one of its greatest natural resources, the forests.—Editor.

FOR the purpose of showing the relation of the West Coast pulp and paper industry to our national forest industry it is essential to first give some figures on the total consumption, production and imports of pulp and paper; also to give a general idea of the important relation pulp and paper bears to the welfare of our forest industries as a whole.

The consumption of paper of all kinds in the United States, including paper board and other cellulose products, has had a tremendous growth in the last ten years and it is predicted that the normal average increase in consumption experienced over the past ten years will continue, as new uses for wood cellulose are constantly discovered.

Consumption of these products in 1914 was 5,500,000 tons. In 1930 it had increased to 12,200,000 tons, of which approximately 3,000,000 tons represents normal recovery of waste paper, leaving a net consumption of approximately 9,200,000 tons per annum. Of this total consumption of paper during 1930, 2,035,000 tons represented newsprint imports and 1,833,432 tons represented pulp imports, the latter being converted into paper products by our domestic mills. This importation of newsprint and pulp can be said to represent a wood consumption in excess of 5,000,000 cords. Adding thereto pulpwood from Russia and Canada, amounting to 1,570,000 cords, the total consumption of products manufactured from foreign wood in the terms of cordwood would equal 6,600,000 cords, or equivalent to the total domestic consumption of pulpwood from our own forests.

Underlying Causes

An intensive study should be made of the underlying causes for this relatively small consumption of our own domestic wood, since in the Southern states and on the Pacific Coast the forest industries have suffered from an over-production during these last ten years to the extent that in the South stumpage values have decreased and on the Pacific Coast, or the far Western states of Washington, Oregon, Idaho, Montana and California, there is still an annual forest wastage of usable pulpwood of approximately 5,000,000 cords. The timber and lumber industry in these Western states during the year of 1930 operated at approximately 50% of capacity due to lack of markets for forest products, with consequent loss of capital and increase in unemployment.

Surveys Deficient

One of the main causes for this severe depression in our forest industry is the lack of market outlet for forest products and failure to encourage domestic production. Foreign imports have been encouraged thru our failure to realize that this country still has the largest stands of timber of any country in the world, sufficient to make us independent of foreign sources of this raw material forever if we would but use ordinary care in assuring stable outlet for our own domestic requirements, which automatically would bring about proper utilization and consequent conservation and interest in reforestation.

The virgin stands of timber, now decaying and allowed to waste because of lack of dependable outlets, are the greatest stands of timber ever found in any country, in many instances reaching a total of 200 cords per acre in terms of pulpwood, compared to an average of 18 cords per acre in most of the other pulp and paper producing regions of the world.

The lack of complete and accurate national surveys of our total timber stands, and their reproducing capacities, has further contributed to the prevalent belief that we are in need of a foreign supply of this essential raw material to augment our own **supposedly** dwindling supply and, as a consequence, we have failed to give our forest industries the recognition and reasonable protection that other timber producing countries have established to serve their own national interests.

Thru this failure we have encouraged the importation and even dumping of foreign pulp, pulpwoods, and lumber on our own markets. I believe that a national survey would conclusively prove that we have ample forest resources, economically available for all our own requirements, and our forests can be marketed and produced as economically as any foreign woods, provided some degree of stability can be had thru law, which will

prevent unfair dumping of pulp, pulpwood and lumber on our markets in times of depression such as we are now passing thru. The plight of our own forest, pulp and paper industries has, during the last two years, been severely aggravated by the enforced curtailment experienced by domestic producers, which principally can be laid to the lack of regulation of imports of these foreign products.

Our domestic producers have by curtailment tried to counterbalance the effect of shrinkage in demand, but all these efforts are wasted so long as the foreign producer can keep running full and sell his surplus production in this market, in many instances at a loss, all at the expense of our own manufacturers and loss of employment for our own people.

The only reasons for this apparent shortsighted policy might be blamed on the **prevalent erroneous** idea that a considerable portion of our forest species may not have been suitable for pulp and paper manufacturing. This idea, no doubt, has been successfully dispelled during the last few years in the large development of pulp and paper mills in the Southern states, making pulp and paper of excellent quality from Jack Pine and the rapid growth of the sulphite industry on the Pacific Coast in Washington and Oregon. These Western plants have in less than five years increased domestic production of sulphite by 350,000 tons annual output. This Western pulp is made from a wood which up to five years ago was considered unsuitable for high grade pulp.

The West Coast Industry

The pulp and paper mills on the Pacific Coast have heretofore produced a tonnage approximately equal to the total consumption in the eleven far Western states. Minor purchases of eastern paper have been offset by resale to the East and sale in foreign markets. Total production of pulp and allied products in 1930 equalled 1,376,000 tons, all of which with the exception of 50,000 tons export, was consumed in our own domestic markets.

In 1924 a development started for the production and sale of chemical pulp to Eastern paper mills dependent for their raw material on foreign supply. This industry grew rapidly until 1930, exceeding 350,000 tons in output last year. A large portion of this pulp was produced from sawmill waste, thus definitely becoming allied to the lumber industry.

This mill waste was thus rapidly absorbed and turned into a valuable commodity. After the absorption of all sawmill waste economically available the new pulp industry has already started to make use of the enormous forest wood waste created by our methods of logging, where heretofore lack of market for small size timber has compelled the logger to leave trees under 12 inches in diameter in the woods to be destroyed and burned. This normal logging waste of small timber often exceeds 50 cords of wood per acre.

Price Declines

The year of 1930 saw a rapid decline in the price of pulp. The world supply and production exceeded the demand by approximately 20 per cent. Foreign operations, with the possible exception of newsprint production in Canada, were practically maintained at normal of 1929 peak demand. The United States markets, offering the quickest ready sale for this excess foreign production, had to bear the brunt of this foreign oversupply so that, in spite of slowing up of demand in our own markets, total foreign imports were practically as large in tonnage in 1930 as the peak year of 1929.

Lacking adequate laws and enforcement, the domestic producers were and now are at the mercy of this foreign dumping which goes on unabated, whether produced in countries using wood cut under subsidy and by enforced labor or not. This naturally has served to curtail production in newly constructed American pulp mills, and has stopped expansion and further construction of domestic mills which would utilize our own adequate forests.

In order to find what importance pulp may play in solving economical reforestation and complete utilization, I think we must not confine the subject to pulp alone as a commercial commodity, but also include paper manufacturing and first review the available markets for both in order to get a fair idea of what further expansion the industry can stand without producing an over-supply, which, of course, would result in failures and consequent stagnation.

Available markets for fine papers beyond our own Western states are limited owing to costly freights and distribution for this class of paper. I think expansion in paper manufacturing must be confined to newsprint and increase in consumption of fine papers in the Western states.

Big Possibilities

Pulp and newsprint production, however, has unlimited possibilities. The United States imports annually almost two million tons of pulp of all kinds, which the far Western states and the South could produce under proper utilization and forest management, but as long as no reasonable protection is had on this commodity, such a production program would not be a safe undertaking. Canada and some of the European countries, our chief competitors, have a duty on pulp and we allow this commodity to come in duty free.

With a reasonable protection on pulp and newsprint the Western states could expand as rapidly as practical costs and gradual replacement of foreign made tonnage would warrant, and always have an assured outlet in our own markets for all the pulp and paper manufactured.

It is obvious that pulp and paper production are an important aid to practical forest utilization and especially important to future crops of timber, limited, however, to the successful development of cheap cutting, logging and transportation costs.

Wood Costs

Other principal pulp and paper producing centers use snow and rivers for cheap transportation whereas we have expensive railroads and comparatively rough ground to increase our costs. What advantage we have in a much larger yield is hardly offset by our disadvantage in transportation costs unless some real effective changes in methods are adopted. This, I confidently expect, will come about through the use of light and inexpensive equipment and the actual cutting of small pulp timber to cordwood whenever a sufficient dependable market is assured.

I do believe that pulpwood now can be taken out economically by loggers cutting virgin stands of timber where railway construction is a necessary part of their commercial logging, and no doubt this development is now at hand since practically all sawmill waste has been absorbed by existing pulp mills and for fuel purposes.

The use of our Douglas fir for pulp and paper making is as yet limited principally to low grade cartons and boxes. Its successful use for better pulp and paper has not as yet been solved. This, however, is my opin-

ion, is only a question of time and other uses will appear, such as insulating fiber, which is developing rapidly.

The solving of our problem no doubt is dependent on: first, absorption of the ever increasing percentage of hemlock saw logs, which at present are a source of worry to loggers as in many instances over-supply has forced prices down so producers have been compelled to sell hemlock at a loss; second, the application of closer utilization with consequent larger yield per acre, which will assist in reducing logging costs and increase revenue for logging railroads.

The cutting of these smaller trees will require a change in methods, which no doubt ingenuity of the logging operators will solve when markets are assured. It would seem that lower costs are principally dependent on an increase in demand and expansion in the industry.

The larger portion of our domestic pulp market is reached via Panama Canal on the Atlantic Seaboard. However, there is a sizeable rail market for pulp in the Middle West now supplied by Eastern Canadian producers and Scandinavian imports via the St. Lawrence and the Great Lakes. Pulp mills located in our mountain states could no doubt supply this market on shorter rail haul provided the possibility of severe foreign competition and dumping tactics were removed.

Safeguard Investments

The importance and practical part that the pulp and paper industry will play in assisting reforestation and utilization of second crops of timber is, of course, dependent on the market outlet for the product. Ten to twenty-year-old trees are satisfactory pulp wood trees and cutting on a selective basis no doubt can and will be practiced when the industry has reached a point where virgin crops and waste are no longer available. Perhaps this problem will solve itself when a percentage of the pulp industry has been located here in our Western states sufficient to begin to absorb the annual waste in our cutting of virgin forests. The pulp manufacturers will be the first to practice reforestation because they must safeguard the relatively larger investment involved in a pulp and paper establishment.

In Summary

In summing up: prospects of a growing pulp industry are good but its real growth and expansion can be said to hinge on the securing of a reasonable protection from foreign dumping in an equal measure as that found necessary for the protection and growth of the paper industry. The benefits derived from such a policy is perhaps more apparent for general public good when we consider that such a policy would tend to conserve and more fully utilize our own forests instead of being dependent on foreign producers for a raw material that every year is playing a more important part in our daily lives. This policy would prevent repetition of what happened during the years 1914 and 1920 when foreign pulp producers exacted prohibitive prices from our paper manufacturers to the extent that pulp, now selling at thirty dollars to forty-five dollars per ton Atlantic Seaboard, during those years was sold for $160.00 to $210.00 per ton.

Profits thus going to foreign producers helped wrest from America the leadership in the newsprint industry and today we find ourselves dependent on foreign made newsprint, all of which could be supplied from wastage in our own forests and manufactured by American labor.

A policy of fair and reasonable protection would soon establish a large pulp and paper industry in the Western states and Alaska capable of supplying the nation's requirements with a two-fold benefit of making us independent of foreign production and at the same time help us to develop a forest policy that would perpetuate our timber resources and make us more conscious of this, one of our greatest national assets. That such a program is possible is positively demonstrated in the Scandinavian countries, particularly in Sweden, where on a timber growing area no greater than the State of Washington that country is annually producing from sustained yield, not only their own requirements of lumber and paper but in addition two and one-half million tons of pulp and paper for export, and one and one-half billion feet of export lumber.

The reforestation and complete utilization of private, state, and federal timber lands will, in a large measure, take care of itself when we have adopted a reasonable program of protection the same as the foreign countries have. With the industry on a reasonably safe basis the private interests will see to it that our forests are conserved for their own protection. If a country like Sweden with less than one-fifth the annual forest yield per acre as compared to Pacific Coast states, can find profit in a sustained yield so can we on the Pacific Coast and in the South.

No matter how much time and energy is expended on enlightenment of practical forest utilization, the fact remains that **the forest crop must be profitable before any actual interest can be developed for conservation.**

I believe that the time is at hand to prove the economics of such a program which obviously involves increasing our domestic pulp production so that the timber resources we now have will be properly utilized. This pulp converted to finished paper products has now a duty protection in practically all grades except newsprint. If paper conversion, which generally represents less than half of the total cost of the finished product, requires protection certainly we should protect the producers of the raw material when such a policy means utilization of our own resources and doubling of the payroll of the industry.

The total cost of a ton of pulp represents approximately 10% basic raw materials in the forests and mines, 90% is labor and transportation.

Attached herewith are general recommendations which of necessity may require modification or study to determine the most effective way to put these recommendations into immediate effect. No doubt goods on the duty free list can not be considered under the flexible tariff provisions and the only move must be a direct emergency law enacted by the next Congress, either establishing a specific duty on pulp products or modification and specific amendments to the existing anti-dumping law, that will give us the needed relief.

Note—Following the presentation of the above statement Mr. Anderson made specific recommendations for stabilization of the pulp and paper industry in the United States and the furtherance of true timber conservation. In substance, Mr. Anderson advocated (1) an immediate revision and enforcement of legislation to rigidly restrict "dumping" of pulp on the domestic market by foreign pulp manufacturers and (2) eventual establishment of a tariff on wood pulp to protect domestic producers. In press dispatches Mr. Anderson was erroneously quoted as also urging a tariff on news print, altho he made no such recommendation.

The Pacific Coast Pulp Industry

as seen from

The Viewpoint of Research

By C. E. CURRAN
In charge, Pulp and Paper Section
U. S. Forest Products Laboratory

Altho making pulp out of Pacific Coast woods is nothing new and great strides have been made by commercial enterprises in elevating Western pulps to a quality plane equivalent to pulps made in any region, there is still much that can be done by purely scientific and research organizations in tracking down some of the variables. How the Forest Products Laboratory proposes to tune its research to be of greatest benefit to the Pacific Coast industry Mr. Curran tells in this letter, written following his recent tour of the West.

AT the outset, I may say that my observations and contacts with the Western industry have resulted in some very favorable impressions. After hearing the reports of other members of the Laboratory who have visited the Pacific Coast, I expected a great deal; I have in no wise been disappointed. In fact, my expectations were exceeded in almost every respect.

Probably the outstanding impression is the progress made by western mills, particularly in the Puget Sound area, in saw mill waste utilization. This is an outstanding achievement. It is to be hoped that the same ingenuity can be applied to the woods waste problem confronting western industry, and which, in the writer's estimation, is of paramount importance.

Relative to the Forest Products Laboratory's program of work, my observations have led to the conclusion that our western species project should be immediately broadened to include other species than Douglas Fir. Western Hemlock is unquestionably the pulpwood species now in greatest prominence on the Pacific Coast. Certain questions are arising relative to the best methods of handling this wood and there seems to be an opportunity to render immediate service to the Western industry by developing certain facts concerning its use. To some extent the same condition prevails in connection with other Western species such as Sitka Spruce and certain of the true firs.

In setting up the program plans for the Laboratory, Section of Pulp and Paper, for our next fiscal year (beginning July 1, 1931) the Director has approved the immediate initiation of a sulphite pulping study on Western Hemlock. This investigation will in part seek to set up improved temperature schedules and to deal with other conditions of pulping and processing which may result in the production of better pulps and papers from this species. It will closely parallel the work previously done here by Miller and Swanson on spruce and by Monsson and Chidester on Eastern Hemlock and certain hardwoods.

In setting up this subject, it is fully realized that Western mills are already successfully producing excellent Hemock pulps, but it is felt that a thorough coverage of variables applicable to this species can not fail to widen its field of utilization and be of assistance in answering operation questions which arise from time to time in Western mills. All of these objectives were attained in the previous work of the Laboratory on Eastern species which had been in use for sulphite manufacture many years before the investigations mentioned were begun.

The sulphite studies will of course include evaluations of the raw material used and of the bleaching, strength development and other properties of the pulps produced. The advantage of beginning this work is the fact that methods of carrying it forward rapidly are available and considerable information should be obtained in a short length of time which should be of immediate interest and value.

Douglas Fir White Papers

It seems logical that the same attack might be profitably applied to some of the true firs and to Sitka Spruce and consideration will be given to these species in further development of the program.

Increasing of the emphasis on Western Hemlock will of course mean some reduction in the amount of work to be done on Douglas Fir. Experiments with this species have gone forward during the current year in a very satisfactory way. A study of the sulphate pulping variables on Douglas Fir has been made and interesting information obtained relative to the effects of concentration, chemical ratio, and ratio of caustic to sulphide in the cooking liquors. Good bleached pulps, suitable for book and bond papers, have been produced from Douglas Fir using a modified sulphate method in which the ratio of chemical to wood is increased but the concentration in which this chemical is used materially decreased. This procedure, coupled with a two-stage bleaching in which one of the stages is chlorination, has met with considerable success in producing a white Douglas Fir paper.

A study of sulphite pulping of Douglas Fir has also

been under way and fairly satisfactory pulps of a bleachable character have been produced by the use of soda and ammonia bases. Use of these bases, of course, involves recovery and additional work in this connection is still to be done.

In connection with the sulphite investigation, a two-stage pulping method has recently been evolved in which semi-chemical liquors (combinations of sodium sulphite and sodium bicarbonate) are used as impregnating agents followed by standard sulphite cooking. Means developed for applying this two-stage cook appear to be commerciallly practicable. The method is especially applicable to Douglas Fir and to other resinous woods as well. Details will be released later.

In addition the investigations with Douglas Fir have yielded data on the chemical and physical characteristics of several shipments of fir from different sites and conditions of growth. Plans for the coming fiscal year call for additional work along this line to supply more complete information.

Still another line of effort is a thorough study of the fiber characteristics of Douglas Fir and other Western species. Both wood sections and chemical pulps are being examined microscopically with the object of establishing a fundamental basis for pulping differences which seem to characterize Douglas Fir and certain other Western woods.

In addition to the above lines of work, which are done directly under the Western pulping project, it should be pointed out that about 50% of the work of the Pulp and Paper Section is on processing and papermaking studies ranging from the handling of wood to the conversion of stuff into paper. These have an important bearing on the solution of problems arising in the strictly species work. For example, the processes of bleaching, beating, jordaning, and the effect of paper making variables are being studied and the facts brought to light are being continually applied to the improvement of pulps and papers made from different species under observation in other projects.

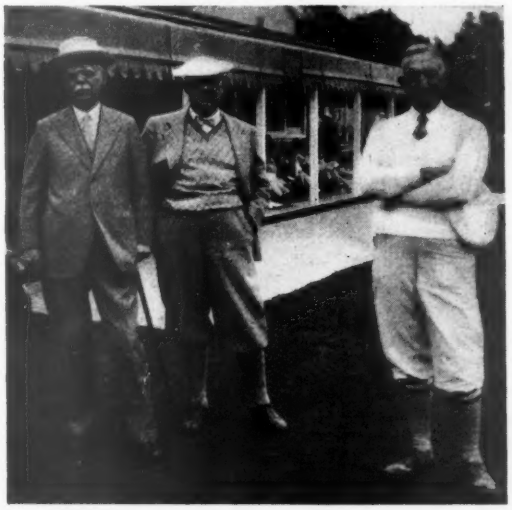
The vision of fine, white, strong paper from Douglas Fir held before the pulp and paper industry of the Pacific Coast is not beyond tangible grasp. Experimental samples of white papers of exceptional quality, made from Douglas Fir, have already demonstrated the possibilities of further research in this direction. Today only a limited amount of Douglas Fir is used for pulp, and most of that goes into coarse papers and heavy board. What will it mean to Western forest industries to open a quality market for the quantities of Douglas Fir now being wasted in lumber camp and mill?

As intimated above, my personal contacts in the West were particularly pleasant. I very much enjoyed the opportunity of making acquaintances and trust that there will be frequent opportunities for contact. It is my plan, as stated at the Everett meeting, to try to maintain a very close contact with the Western industry in the future.

How This Golf Business Started

Augustus Johnson, San Francisco representative of the Everett Pulp and Paper Company, has given a bit of history concerning the origin of the Del Monte golf tournament. He writes:

"Regarding our golf tournament which was the Thirteenth Annual, I might advise that 13 years ago four representatives of paper mills of which I was one, were invited to be the guests of the Pacific States Paper Trade Association at their Second Annual convention. It was then that we four representatives got our heads together



An informal snapshot at Del Monte. Left to right, William Howarth, president Everett Pulp & Paper Company; J. Y. Baruh and Henry Zellerbach, both of Zellerbach Paper Company.

and suggested to Mr. M. R. Higgins that we, as manufacturers, be allowed to put four prizes for a golf tournament, in which the jobbers and mill representatives would compete. Mr. Higgins then decided that if we would do this the association would put up the championship prize.

"During the thirteen years this gathering has grown to be a wonderful institution in our opinion, bringing about contacts, socially and in business, which could not otherwise be accomplished.

"We four manufacturers also hit upon the idea that in order to keep dignity and poise, we would be accompanied by our wives, so that our ladies have been of great assistance to us in this respect, for you know, in the East a great number of the paper conventions are stag affairs."

Bastedo Busy with Boards and Boxes

C. J. Bastedo, who can use up lots of fingers in counting up his experience in the paperboard and container business, holds forth these days in the Longview Fibre Company's offices in the Wells-Fargo Building, San Francisco. Fibre containers for canned fruit and canned fish products are one of Mr. Bastedo's chief interests. The mill at Longview, Washington, which only within recent months moved into the solid fibre container field, is reported to be making a product which is being well received in the trade.

H. L. Wollenberg, president of the Longview Fibre Company, left his San Francisco offices for a few days in late May to pay a visit to the company's mills in Longview, Washington.

How Business Looks in the Orient

There are Changes Under Way in the East We are Told

An Interview with

OSCAR A. JORGENSON

B. C. Pulp & Paper Company, Ltd.

who recently returned from a tour abroad

OSCAR A. JORGENSON

While signs of substantial market improvement may still be lacking in the Far East, both China and Japan are making a real effort to put their industrial house in order and the ultimate result must surely be beneficial, according to Oscar Jorgenson, assistant manager of British Columbia Pulp & Paper Company, who recently returned from a tour of those countries. It is the policy of the B. C. Pulp & Paper, which has extensive business relations with Chinese and Japanese pulp buyers, to send one of its executives to the Orient at least once a year. Last year President Lawrence W. Killam made the trip. Mr. Jorgenson visited the Orient two years ago.

The most interesting development noted by Mr. Jorgenson in Japan was the apparent success of the cartel system in regulating the operations of the paper industry.

"There is one thing to the credit of the Japanese industrialist," said Mr. Jorgenson. "He knows how to co-operate and does so. The Japanese paper, textile and chemical industries have adopted a system of output curtailment that apparently really works, although similar attempts in Canada and in the United States have failed. The Japanese paper men agreed to curtail paper production to 65% of the rated capacity of the mills. The surplus has been locked up and the companies are forbidden to add to their surplus as from December 1, when the plan went into effect. To guard against infraction of this agreement, paper machines not required have been actually sealed and inspectors make periodical calls to see that the mills abide by the contract.

"One factor in favor of the Japanese industrialists is that they can call their workers together at twenty-four hours notice. Curtailment of operations does not lead to the dislocation and readjustment that are inevitable in this country. There is unemployment in Japan, but that is not serious because it is a custom among the Japanese for each family to take care of its unemployed members. Everyone chips in on a voluntary basis to assist the man without a job. Consequently, soup kitchens and the dole are unknown."

Mr. Jorgenson says that Japanese competition in China is being keenly felt in the paper industry. Shipping through the ports in Manchuria, which are directly under Japanese control, Japanese paper is dumped on the Chinese market at a price at least 5% lower than the standard Chinese price. Chinese mills are suffering in consequence and a strong movement has developed in China with a view to preventing a continuance of this Japanese dumping of paper and also of flour and cotton. This situation, according to Mr. Jorgenson, does not adversely affect shippers of pulp or paper in Canada or the United States, because much of the paper shipped by Japan into China is made from pulp produced on this coast.

Japan is supplying the home demand for paper and its purchases of paper from outside are restricted almost entirely to finer grades. Saghalien is the source of most of the pulpwood used in Japan and several large newsprint mills have recently been established on that island. Very little pulpwood is being brought in from Siberia and Soviet competition is not a serious affair.

About the only pulp made in China from native fibre is reed pulp, according to Mr. Jorgenson. This is for light writing paper stock and often reed pulp is mixed with sulphite pulp, all of which has to be imported into China from other countries.

Trade conditions generally in Japan showed improvement during the first quarter of 1931, although a reaction set in in April, says Mr. Jorgenson. Japan, however, is balancing her trade with other nations—not on paper perhaps, but because of her invisible earnings through savings of her nationals abroad and the revenue of her ships operating in foreign waters.

Mr. Jorgenson says that one evidence of Canada's determination to strengthen herself industrially is the recent appointment of a minister of industry, commerce and labor with bureaus in all the chief cities for the promotion of scientific and modern methods of manufacturing and merchandising. These bureaus are run by experts many of them trained in foreign countries.

"One of these days China will be utilizing waterpower to operate its paper mills," said Mr. Jorgenson. "At present only steam is used, but a survey of the country's waterpower is now being made."

Hot Acid Recovery

In Sulphite Pulp Manufacture*

By H. LUNDBERG
Pacific Coast Representative
G. D. Jenssen Company

In this paper Mr. Lundberg traces the refinements developed in the sulphite cooking process leading up to the development of the Chemipulp Process. At a time such as the present when steady pressure is being exerted to improve pulp quality and decrease production costs, the statements are particularly timely.

THE standard method of cooking sulphite pulp has undergone very few changes during the years gone by since its application for commercial use.

In 1866 and 1867 the American chemist, Benjamin Chew Tilghman, was granted English patents for the process of cooking wood with a solution of sulphurous acid. It is also of interest to note that the Tilghman English patents included recovery of the sulphur dioxide at the end of the cooking process.

Naturally various refinements in the operation and equipment have been developed and incorporated in our modern pulp mills, but the general procedure is the same as employed by our pioneers.

The digester is charged with chips and acid, thereupon steamed or heated to a certain desired temperature, in many cases according to predetermined temperature and pressure curves. The liquors and gases which must be relieved from the digester during the course of cooking is recovered or reclaimed as completely as possible and is used in the acid making to strengthen the raw acid, or as it is termed, to build up the cooking acid.

There are various ways of reclaiming this relief, but up to a few years ago the gases and liquids had to be cooled down to a suitable temperature before able to be reclaimed. This was necessary because of the solubility of the sulphur dioxide in water is greatly dependent upon the temperature and also upon pressure.

From the early beginning of the sulphite pulp industry it has been known that no actual cooking or chemical reaction takes place inside the digester until a temperature of 105° C, or 221° F. has been reached. During the cooking certain amounts of gases and liquors are, as mentioned before, given off to allow a certain temperature rise and enable the keeping of a constant pressure. These gases and liquors contain, in an average sulphite mill, enough heat units to raise the temperature of the cooking acid from 60 to 80° F. to about 170° F.

All this was known for years and yet we have been, and are still doing, in the majority of our mills, cooling down these relief gases and liquors to a temperature where they could be absorbed in the raw acid at atmospheric pressure. This wasteful destruction of heat was fully acknowledged by the industry, but it is only a few years ago since a simple effective recovery system was developed and introduced to the industry whereby the relief from the digesters can be recovered without the loss of their inherent heat units. This hot acid recovery process goes under the name of the Chemipulp Process and consists mainly of a pressure vessel, the accumulator, into which the relief gases and liquors are absorbed under pressure without previous cooling, in direct contact with the raw acid from the acid plant.

The accumulator is built to withstand a pressure of about 75 pounds, or a pressure corresponding to the digester working pressure.

The main difference in the digester operation between the old way of recovery in cooking and the new way, brought about by the hot acid recovery process is consequently, that cold acid is used in the one case on starting a cook, and hot acid in the other.

Steam Saving

The steam saving the hot acid recovery process can affect is considerable. Approximately direct saving of 2,000 pounds of steam per ton of pulp can be made.

The steam saving is however, far from the only benefit to be derived by the Chemipulp Process. The advantages to be derived are so diversified and important that there is, in our opinion, not a single pulp mill in operation in which a Chemipulp Process would not prove to be its most valuable and profitable investment.

The Chemipulp Process was primarily developed for recovery of the hot relief gases and liquids under pressure and supplying the cooking acid to the digesters at an initial temperature of approximately 75° C. and 40 pounds pressure, but has lately proven beyond question that thru it more thoro penetration caused by the lower viscosity of hot acid, the yield per bone dry wood is materially increased.

One Canadian mill reports the remarkable yield of 51 to 52% bone dry pulp from bone dry wood. This increased yield, combined with better recovery, produces an appreciable saving of process materials such as sulphur and lime or limestone. The product is also improved in quality both in point of "pop" and "tear."

*Paper presented at the Spring Meeting of the Pacific Section of TAPPI, Everett, Washington, April 18, 1931.

The major part of an installation consists of an acid accumulator which is a vertical steel shell located either inside or outside the mill. Either outside or in, the cylinder shell is thoroly insulated against heat loss. On the inside the shell is lined with acid resisting brick in the same manner as a digester. Equipment consists of high and low pressure relief gas lines with necessary valves and fittings. The set-up is much the same as standard digester relief apparatus. In fact a digester already installed can be utilized as an accumulator.

The capacity of an acid accumulator is dictated by cooking conditions, but contains not less than one and one-quarter charges of acid for a digester.

The method of operation is simple. At the outset,

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the accumulator is partly filled with cold acid from the storage tanks, then all relief gases from the digesters are conducted into the accumulators thru a proper mixing arrangement, thereby contacting the hot gas and acid with the cold acid. This heat transfer builds up the temperature to about 75° C. in the accumulator and creates a pressure, thanks to which a greatly superior absorption of SO^2 takes place than is possible under atmospheric conditions.

Following is an authentic report from an Eastern installation, showing what the Chemipulp Process did for them:

	Before Chemipulp installation, week ending Apr. 5, 1930	After Chemipulp installation, week ending Jan. 31, 1931
Sulphur, per ton	321.0 Lbs.	209.7 Lbs.
Lime, per ton	191.3 Lbs.	172.9 Lbs.
Wood, per ton	1.731 Cords	1.55 Cords

A Canadian mill has sent us the following monthly report of their operation:

Steam F. & A. 212° F.	4,540 Lbs.
Sulphur	180 Lbs.
Limestone	371 Lbs.
Total Screenings from Knotters and Screens	0.4 %
Yield, Bone dry Pulp from Bone Dry wood	51.07%
Strong Tower:	
Total	3.15
Free	1.79
Combined	1.36
Temperature	28° C.
Accumulator Acid	
Total	5.62
Free	4.55
Combined	1.07
Temperature	71° C.
Average Wood Density	0.32
Average Moisture in chips	60%

With time, temperature, and concentration as controling factors in a sulphite cook, any method which affects one or all of them will result in a variation of lesser factors. Under the hot acid process, these variable factors are all favorable to decrease cooking cost. If, for instance, the average cooking time in a mill is accepted as 11 hours, by the use of the hot acid process this time can be cut to 9 hours without disturbing the quality of the products, showing a time saving of over 18%. If the length of cooking time is above or below 11 hours, the 2 hours saving still applies. While the percentage of time will naturally vary, yet the time saving in actual hours is constant.

A steam saving of 2,000 pounds per ton, as mentioned before, may seem startling, but is easily demonstrated:

1st—The temperature is up from the start;
2nd—The initial acid charge contains as much heat uniformly distributed, as is ordinarily added in the first two hours of steaming.

Add to this the fact that much less dilution of the acid takes place by condensed steam, and the steam saving is easily understood.

Summarizing the benefits that can be derived from cooking with hot acid, we have:

Higher Plant Efficiency
Decreases boiler peak load draw; increases steam plant efficiency, and capacity.
Steam saved equals enough B.T.U.'s to cook an additional quarter ton of pulp.

Increased Production
Relatively high initial acid temperature saves time and increases production.

Materials Saved
Hot acid means less steam condensation dilution which gives a stronger acid with a lower sulphur and limestone consumption.
Hot acid is synonymous with better chip penetration; which reduces screening rejections.
Hot acid gives a higher yield of pulp with a stronger pop and tear test, bleached or unbleached.

That the claims made for the hot acid or Chemipulp Process are born out in actual operation, are demonstrated from following clippings taken from an article by Mr. R. T. Steedman, Superintendent of the Abitibi Power & Paper Company Ltd., written for a publication sponsored by the Abitibi Power & Paper Company and distributed among their employees.

Abitibi Endorses

"We are the first sulphite mill to use a digester as an accumulator. The increase in acid temperature allows us to get the same quality and quantity of pulp from four digesters, as we previously had with five digesters, due to the shortening of the cooking cycle obtained by staring with hot acid. That alone will give an idea of the benefits derived by installing Chemipulp.

"Other benefits are a 25% reduction in steam consumption, less tailings due to better penetration of the hot acid into the chips, and so more No. 1 pulp obtained per digester. This additional No. 1 pulp gives a saving per ton on all process materials.

"The installation in this mill was controlled in such a way that very few changes were necessary and the old methods were replaced by the new without any impediment to operation or quality of pulp. This was only achieved by the cooperation of all of the operators and most of the credit goes to the foremen who wholeheartedly went about their work. Perhaps a point worth mentioning here is that all the old-time operators who only change their ways after great sausion has been exercised (due to the gerat variety of factors that influence the quality of pulp) have all been converted to this new system and speak volumes in its praise and simplicity.

"Before installing this new system the Steam Engineer of the Service Division spent several months taking cooking observations regarding temperature and quantity of relief, etc., until a complete heat balance for a digester contents was computed. These results showed a steam saving which almost exactly agreed with the results actually found later; which shows the accuracy of this work and how this method of control is worth while pursuing.

"By recommending this installation here and showing results and by going further ahead with its application, we are going to place Abitibi amongst the leaders in the field as far as modern sulphite operation is concerned."

Since the first installation of the Chemipulp Process at Ogdensburg, N. Y. in 1926, the piping hook-up has been considerably improved and it will probably interest you to hear something about the latest piping arrangement.

An improved eductor has been designed for both the top and bottom of the drop leg leading from the main high pressure header. The eductor at the top is connected into the cold acid supply and this connection has a valve so that the supply going to the accumulator can be regulated right at the top eductor which is normally located above the operating floor of the digester room. The other connection to the eductor leads, of course, to the main high pressure relief header. The pump supplying liquor from the storage tank to the eductor is a relatively high head pump and the action is to condense and absorb all gases in the eductor from where the built up liquor flows through the drop leg, to the second eductor located at the bottom of the drop leg. The acid supply line for the second eductor is furnished by a relatively high head pump connected into the bottom of the accumulator and this pump, therefore, is re-circulating liquor out of the bottom of the accumulator and into the eductor No. 2. The force or velocity of this liquor places a suction on the drop leg and thereby keeping the pressure in the drop leg low.

Intangible costs in pulp manufacture are being ferreted out in the face of sharpening competition. It is a safe prediction that ten years from now we will look back and wonder at the wastes we are today tolerating as "necessary."

The force or velocity of the cold liquor flowing into No. 1 eductor also accomplishes the same purpose, that is, it places a partial vacuum on the high pressure eductor. All of this means that much less regulation of the digester relief valves is required as compared with the old method of filling the accumulator immediately after a digester is pumped with hot acid.

The No. 1 eductor is of course, supplied continuously with cold acid from the storage tank and also No. 2 eductor is supplied continuously with acid from the accumulator. This means that the accumulator is being gradually filled with fresh acid during the time that the digesters are relieving and if a given production is maintained, the flow of cold acid to No. 1 eductor can be regulated to this production after which it is not necessary to change the flow of cold acid to No. 1 eductor.

By operating as described, one of the European mills is able to maintain a partial vacuum in the high pressure header, at the same time carrying a pressure of five atmospheres or approximately 71 pounds in the accumulator.

Another very important question that the sulphite committee decided to have brought up at this meeting is the question of high SO_2 vs. low SO_2 for cooking. An experiment has been carried out for months in a New England mill equipped with hot acid recovery which showed:

That a high per cent free SO_2 in the cooking acid, even when employing low temperatures, had a tendency to materially lower the tear and fold of the pulp produced.

The magnitude and essential importance of the paper industry from the national standpoint makes it impossible to contemplate a static condition in view of the industry's national insufficiency of raw materials, an insufficiency which should and can be met by domestic production.

The Mullen test however, averaged approximately the same with high acid as it did with low acid. Also the bleach consumption remained approximately 12% both with high strength acid and low acid. With high per cent SO_2 we consider any test above 6% free SO_2. The average maximum temperature with the strong acid was approximately 127° C.

The mill management in the mill conducting these tests have therefore gone back to operating with an acid average about 6% total and about 1.10% combined SO_2.

Since learning of these results we have also heard that one of our foremost West Coast mills has had similar experience and reached the same conclusions.

Pulp Liquor—Oysters—Finis

"Finis" was written for the controversy long waged between the oystermen of upper Puget Sound and the Rainier Pulp & Paper Company at Shelton, Washington, when on May 18th the citizens committee, organized by Shelton residents in the emergency to preserve their local industry, filed in the office of the County Auditor a series of instruments in the nature of a perpetual waiver of damages on the part of the owners of oyster lands involved in the original suit in federal court and an order for their dismissal.

In effect, the instruments related that the owners had certain claims against the Rainier Pulp & Paper Company for damages to oyster lands from the dumping of sulphite liquor, which damages the pulp company denied, but that the citizens of Shelton assumed the duty of settlement and raised certain funds to discharge the claims in order to permit the company to resume its operations.

Each oyster land owner involved in the suit agreed to accept certain sums and to dismiss the suit without prejudice except as to future violation by the company of its agreement to dispose of sulphite liquor out of the bay.

This finale of the pulp-oyster squabble developed into somewhat of a ceremony when a citizens committee personally escorted a check for $166,000 and conveyed it to attorneys for the oyster people at Tacoma.

The controversy between the pulp mill and the oyster land owners has been waged practically continuously since the mill first began production in June, 1927. The mill was at one time faced with suits totaling in excess of $1,500,000 and, threatened with such an oppressive burden upon its operations, announced that it would move its mill to some other locality rather than attempt to continue in production under such pressure. Faced with the virtually economic collapse of its community thru removal of the most important payroll, the Shelton citizens organized an emergency committee and in one of the greatest displays of civic spirit ever to be shown, in a whirlwind campaign dug out of the pockets of itself and friends of the community the sum of $166,000 which had, by prearrangement, been fixed as the sum sufficient to liquidate the claims.

Propose New Felt and Roofing Mill

The Superior Felt & Paper Mills, Inc., incorporated under Delaware laws, has announced that it has purchased a tract of land in the Ballard district of Seattle and will begin construction soon on a 20-ton mill to manufacture felts, roofing, heavy and light boxboard, wallboard, etc., using waste papers and rags as principal raw materials. The plant would have a maximum capacity of 50 tons of finished products per 24 hours.

The site is on the north shore of Salmon Bay, near the foot of 28th Ave. N.W., and was formerly used by a shingle mill. The company has temporary offices at 2637 W. 54th.

The company has a capitalization of $400,000 7 per cent preferred stock with $100 par value, and 5,000 shares of no par common.

The officers of the company are: President, Ray E. Stanley, for seven years general superintendent of the Ohio Match Co., of Spokane, who for the past three years has made an extensive study of paper mills and roofing manufacturing; vice president, I. Schuman, for fourteen years superintendent of Charles Farley Co. roofing mills of San Francisco, and now vice president of the Pacific Iron & Metal Co., also member of the Industrial Committee of the Seattle Chamber of Commerce; treasurer, S. Glant, secretary of the Pacific Iron & Metal Co., with fifteen years' experience in handling rag stock; secretary, C. B. Batchelder, for past ten years connected with the Carnation-Albers Bros. Milling Co. as traffic manager; director, A. M. Hathaway, vice-president and general manager of the Yakima Milling Co., of Yakima.

President Stanley said they would start construction work on the plant late in June, the cost of the building and equipment running around $200,000. The plant will employ from 50 to 60 men to start with.

A part of the stock is being sold in New York City by Blanchet & Company, who state they will raise enough funds to start construction work within a few weeks.

Charles Beckwith, Pacific Coast manager of Carter, Rice & Company (left) poses with Lloyd Riches of Hawley Pulp & Paper Company at the recent paper trade convention at Del Monte.

Einzig on Oregon State Payroll

Effective June 1, William Einzig was named temporary secretary of the board of control and state purchasing agent for Oregon. It will be Mr. Einzig's job to reorganize the secretarial and purchasing departments, Governor Meier announced, in making known the appointment.

Mr. Einzig has been doing some work for Governor Meier, who recently took office, and the present appointment was generally forecast. The appointment followed a political shake-up of the departments affected.

Mr. Einzig is well known to the pulp and paper industry on the Pacific Coast. He was for some years purchasing agent for the Washington Pulp & Paper Corporation, and other mills affiliated with the so-called "Zellerbach group" in the Northwest, and later was retained by the Weyerhaeuser Timber Company, which is now building a pulp mill at Longview, Wash.

New Washer for Port Angeles Mill

The Olympic Forest Products Company is planning to install a new pulp washer to provide additional capacity for washing bleached sulphite pulp. The mill has a daily capacity of 175 tons and in recent weeks has been running at exceptional capacity.

Pacific Coast Sulphite

No more can it be called Cinderella

By G. J. ARMBRUSTER*
Puget Sound Pulp & Timber Company

TODAY the West Coast sulphite manufacturers do not present their pulps to the Eastern markets with apologies, for they feel that their products are the equal of the other pulps being offered, both Eastern and foreign. They do, however, seek your permission to offer a few facts relating to this increasingly productive area that is bound to be the greatest factor in the future production of quality papers at an economical cost.

We have represented in this audience the most critical group of men before whom anyone could be asked to stand and discuss pulp. Here are men whose livelihood depends on their intimate knowledge of pulp, upon whose skill in making and handling the owners depend for their profits. It is with profound appreciation for the character of this audience that we have gathered these thoughts for presentation.

Five years ago we would not have had to argue this subject. Out there on the Pacific Coast they have been making paper out of Pacific Coast woods for nearly half a century, but it has been purely a local industry. It was not until about 1925 that the Pacific Coast industry began to break its geographical limits. Consequently, up to that time, there had been no occasion to bring the sulphite pulps of the Pacific Coast into comparison with pulps from our Eastern states, Northeastern Canada, and Europe.

Quality Improvement

But these are days of rapid changes. There are many in this group whose experience extends back for more than twenty years. Every one of this older group will readily admit that pulps which he turned out as A No. 1 grade a score of years ago would by no means classify that high today. In fact, it is safe to say that if some of those earlier day pulp samples were dug out today there would be much wagging of heads that such poor pulp ever could have satisfied.

It is not necessary to go back twenty years to make these comparisons to show the steady improvements that have been made in pulp quality. The pulp manufacturers have made great strides in the post-war years. Technique has improved. Equipment has been refined. Even five years is sufficient time in which to note definite progressive improvement. Competition in the paper industry has been getting much sharper in recent years. The paper distributors have been doing some clever selling in this period by steadily improving the qualities of their papers without advancing the prices or calling the attention of their trade to these betterments. The result has been that the ultimate consumer has gradually and unconsciously been accumulating a desire for better papers.

The effect of this steady improvement in the quality of paper has been passed right back to the pulp mill with the result that today the paper mill superintendent is much more critical and demanding on the score of quality than he was only a half dozen years ago.

All that has been said up to this point is only by way of stressing the rapidity with which things move these days. No doubt some of the West Coast pulps which first came into Eastern United States markets a few years ago were not of the best quality. But they found a use, somewhere, in some grades, at some kind of price, and since that time the pulp tonnage on the Pacific Coast has been steadily expanded. Today the Pacific Coast mills are producing annually, for outside sale, 195,000 tons of bleached sulphite and 90,000 tons of unbleached sulphite. If we add two Canadian mills and one bleached sulphite mill under construction in Washington, the total sulphite tonnage available for outside sale is in excess of 400,000 tons annually.

Equal to Any

Most of that pulp, gentlemen, is coming right into your own territory. It is going into every grade of paper, and into many special uses. Large tonnages are being absorbed by some of the industry's best known manufacturers of fine papers. Pacific Coast pulp is no longer any Cinderella. Its merits have been discovered by many among you. It may be that those of you who have not discovered the qualities of Pacific Coast sulphite, or who are not convinced of its merits, are not abreast of production conditions on the Pacific Coast today. We number, among the newer mills, plants which are equal to any pulp plants in the world. That excellence of design and equipment in the Far Western mills is one reason why the Pacific Coast mills have been able to build up in five short years a business of 400,000 tons of pulp annually.

We might as well face the truth that Pacific Coast pulp is already a factor of first importance in world markets and that greater tonnage can be expected to come from this comparatively new source in the near future. In these days the mill owners are scanning the cost sheets with unusual diligence. Pacific Coast pulp stands in excellent competition with pulps from all other sources, in point of quality and in point of cost. It is, therefore, logical to assume that sharp competition in the paper markets is going to continue to apply pressure for reduction of cost and maintenance of quality and that intimate acquaintance with Pacific Coast pulp is something that all of you may look forward to.

Another point that may be mentioned is the interest you, as domestic producers of paper, should have in

*A paper delivered at the annual convention of the American Pulp & Paper Mill Superintendents' Association, Dayton, Ohio, June 4, 5 and 6, 1931.

the encouragement of expansion in the production of a domestic product, not only for economic safeguard for your own future, but as a purely national economic interest. No doubt many of you will recall pulp prices during the war period when the plants dependent on foreign sources for this essential raw material were subjected to confiscatory prices, unheard of profits going to the foreigners. This profit supplied them the means to construct and develop an enormous pulp and paper business, upon which this country is today dependent for a large import of pulp and paper, which should, by all means of reason, be produced in this country.

On Technical Side

Thus far this paper has stressed the economic phase of this question. We have attempted to point out that Pacific Coast sulphite is here, that it has decided it likes this market, and it will be here tomorrow. The United States market is its logical outlet and it is a definite factor to be reckoned with for a definite supply in the future.

On the technical side, the question of the all-purpose qualities is best answered in general by pointing to the rapid development of the Pacific Coast industry and the acceptance of its pulp by mills making everything from the finest bonds and writing down to paper boards. However, some discussion on the purely technical side is in order. To many of you who are now using Pacific Coast sulphite daily this will be grinding old meal, but no doubt there are some among you who have not yet made the acquaintance of the Far West fibre.

Lots of Wood

There are four main species of timber available as a source of supply of raw material for West Coast pulps. They are Western Hemlock, White Fir, Silver Fir and Spruce. Their volumes and usage are in the order named, although Hemlock is, by far, the most abundant.

The Pacific Coast timber consists largely of fine, straight, old trees usually measuring from 400 to 700 board feet to the log for pulp use, free from knots and imperfections for from 40-80 feet. This you can see is an important factor in establishing the unusual cleanliness of Pacific Coast pulps.

There is enough virgin timber on the Western slopes of the North Pacific Coast states to sustain a continuous production of not only what is produced today, but in addition thereto, a tonnage equal to the foreign sulphite now imported into the United States. Timber stands on the Pacific Coast states, particularly Washington, Oregon and Idaho, will average not less than 60 cords per acre of excellent pulpwood, and in many instances will run as high as 175 cords to the acre, without taking any of the size trees that are called pulpwood in other producing regions. These smaller trees today are destroyed and left because of lack of demand of pulpwood.

Easy Pulping

Is it not logical to assume that with such enormous stands available for the manufacture of this product within our own country that expansion is bound to occur and eventually the paper producers who have allied themselves with this source of supply will find permanency and economic advantages in recognizing and encouraging West Coast pulps?

These woods are of the easy pulping types and are all excellent yielding species. They will respond to any of the methods or processes which are in use on any other woods in any country. For any given grade no pulp is superior in cleanliness to pulp made from these woods.

To the majority of papermakers, when Pacific Coast sulphite is mentioned, the thought of Hemlock pulp immediately bobs up, but do not be confused, for the Western Hemlock—Tsuga Heterophylla, as it is known in botanical parlance—compares very favorably with the Eastern Spruces, both the white and black variety. In fact, it more nearly approaches the Black Spruce, which is conceded to be the better pulp making wood of the two. By no means can it be classed with the Eastern Hemlock—Tsuga Canadensis—as the Western Hemlock is in a distinct class by itself for it not only is an easier pulping wood, but also it yields considerably higher and is a far better handling pulp in the beater room.

Comparisons Difficult

Treatment of Pacific Coast sulphite has generally been found to be slightly different from other pulps. In this lies the main source of difficulty, if any, that may have been experienced to date in the successful use of Western pulps, but if every producer of paper using Pacific Coast sulphite would make it of sufficient interest to study and experiment with this new product, it is our belief that the same, and in many instances superior, results can be had from this Pacific Coast sulphite than from other known brands.

Due to the many methods used for computation and to modifications introduced by many mills, actual strength properties of pulp or quality expressions are rather unsatisfactory mediums for comparison unless they happen to be made by the same persons using the same apparatus and computations. Therefore, we cannot give any specific data with reference to Mullen, freeness, tear, and fold, but we can express ourselves in a more universal language regarding Alpha and Copper Number.

The almost negligible quantities of pitch contained in Pacific Coast sulphites makes them most desirable, and this is an important factor, not only from the standpoint of manufacturing troubles but also from a paper quality point of view.

Closer Contact

These pulps are in increasing demand for the rayons, cellophanes and superior quality specialties where a high Alpha content and a low Copper Number is of prime importance.

There is one further thought that we would like to bring out about the business situation with regards to the West Coast pulp, and it is embodied in one word—distance.

In the beginning, when this pulp commenced coming into your territory, everyone was groping about to find the proper characteristics for your markets, and consequently a great many mistakes occurred, and these could not be easily talked over or rectified. This was due to the fact that we did not possess the rapid means of communication that is now at our disposal, but today we are in a different position, the better, and more economical telephone service, the air mail, and air services, and last but not least, faster freight and passenger services, have all added a medium that will bring about a closer cooperation between the Eastern paper converter and the Western pulp man. This closer cooperation will eliminate mistakes, which may have occurred, and would insure for the future a sounder and more friendly relation.

Spaulding Pulp Resumes Activity

Stating that part of the funds would be used to provide additional needed machinery, President Charles K. Spaulding of the Spaulding Pulp & Paper Company, Newberg, Oregon, last month announced the issuance by the company of a $300,000 first mortgage 6½% bond issue.

The Spaulding mill has been idle a great part of the time in the past year or more, but is now again in operation. It is a three-digester plant, with a rated cooking capacity of 75 tons of unbleached sulphite per day. The drying equipment has been somewhat of a bottleneck in the plant, but new equipment in this department, partially installed before the mill shut down some months ago, is expected to equalize this inadequacy.

The mill is now being operated by C. F. Beyerl, whose former tenure with the Oregon Pulp & Paper Company at Salem and the Western Paper Converting Company of the same city makes it unnecessary to introduce him to the Coast industry. Mr. Beyerl is being assisted by Ernest Schweitz, who was previously connected with the Spaulding mill in a designing and operating capacity. George Frogner, formerly of the Crown Willamette Paper Company, is also now with the Spaulding mill.

A. C. Littig, business manager of the Spaulding Pulp & Paper Company since the inception of the company about four years ago, has resigned.

Japan's Paper Industry
Production and Sales—March, 1931
(Amounts stated in pounds)

	Productions	Sales
Printing Paper, Superior Quality	14,331,750	14,907,627
Printing Paper	9,406,411	10,035,667
Writing Paper	3,109,468	3,456,844
Simili Paper	9,779,818	8,273,684
Art Paper	1,279,676	1,022,883
News Printing Paper	41,938,191	42,490,232
Sulphite Paper	3,969,851	4,598,857
Coloured Paper	1,206,312	1,344,048
Wrapping Paper	10,296,195	12,106,023
Chinese Paper	1,431,418	1,572,119
Board Paper	5,404,302	5,804,268
Sundries	6,032,592	6,090,775
Total	**108,185,984**	**111,703,027**

Japanese Rayon Experts Visit Coast

On the last leg of a journey which took them around the world, two Japanese rayon experts passed thru Seattle early in June. They will sail from San Francisco for Japan.

Y. Yoneda Teikoku is head chemist of the Artificial Silk Company of Osaka, Japan's greatest industrial city. His companion on the trip was U. Nishioka, who is chief of the mechanical department of the same rayon company.

The trip included a long journey across Siberia by rail and visits to mills in Scandinavia. On the Pacific Coast they visited a number of the newer pulp mills, being particularly interested in the general operating technique.

Altho they are not themselves concerned with sales and purchase of pulps for rayon, they stated that Japan is tremendously interested in the development of the sulphite industry on the Pacific Coast as a potential source of supply for the artificial silk industry in Japan.

Wood Room Improvements at Everett

The Everett Pulp & Paper Company, manufacturing high grade soda book papers at Everett, Washington, is reported to be contemplating further improvements in its wood room. The mill has in the past year effected a number of refinements in process which have very materially reflected improvements in the quality of its papers. The contemplated changes are directly in line with still further improvement in quality.

Ward R. Howard, vice-president and general manager of the Howard Paper Company, Urbana, Ohio, who visited distributing branches of Blake, Moffitt & Towne on the Pacific Coast last month, that organization having recently taken over the representation of Howard papers in the Western states.

Paraffine Building New Linoleum Plant

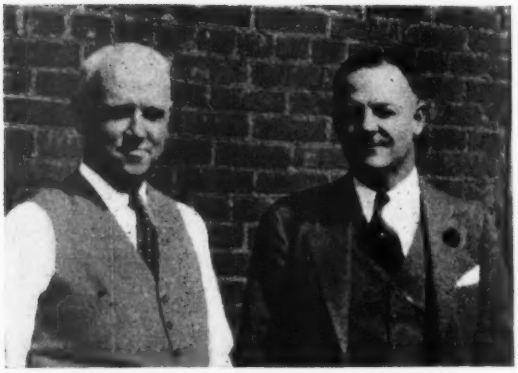
Work is now in progress on the construction of a new plant, the first on the Pacific Coast, for the manufacture of plain, jaspe and battleship linoleum. The new plant is being erected adjacent to the main properties of the Paraffine Companies, Inc., at Emeryville, California, on the industrial east shore of San Francisco Bay.

Entering into the linoleum field represents a departure for the Paraffine Companies, Inc., altho the enterprise shown by this organization in recent years in manufacturing and marketing their other floor coverings, paint and prepared roofing, precludes any display of surprise upon the expansion of the company into allied fields.

Following the merger of the board and container interests of the Paraffine Companies with the similar interests of the National Paper Products Company into a new organization now operating as the Fibreboard Products, Inc., a few years ago, the Paraffine Companies have specialized in the field of "Pabco Products" covering a wide line of Coast-manufactured prepared roofing, patent shingles, paint, floor coverings and kindred items.

The company operates two cylinder machines for the production of basic felts from rags, old paper, redwood bark and other materials. These felts are converted in other departments of the mill into saturated roofings and printed linoleum.

The plant has been operating at good capacity, particularly in the floor covering department.



William R. McHaffie (left), resident manager of the Crown Willamette Paper Company's converting plant at Los Angeles, pauses for a moment in the busy fruit wrap season to pose with H. A. Swafford, recently assigned to the same branch.

Swafford Now at Los Angeles

With the closing of Crown Willamette Paper Company's mill at Floriston, California, recently, H. A. "Hal" Swafford has been transferred to that company's branch at Los Angeles. Mr. Swafford was formerly mill manager at Floriston.

The Los Angeles plant converts jumbo rolls into printed and plain wrap for citrus fruits and other products of agriculture grown in such abundance in the Southern California district. Mr. Swafford is devoting the greater share of his time to sales work in the field.

Los Angeles operations for many years have been under the direction of Wm. R. McHaffie, who continues in his same capacity as resident manager.

Weyerhaeuser Construction Moving Along

The new 150-ton bleached sulphite pulp mill which the Weyerhaeuser Timber Company is now constructing at Longview, Washington, on the banks of the broad Columbia River is each day taking more definite shape. Chris Kupplers' Sons, construction contractors, who have poured many thousands of yards of concrete in new pulp and paper mills on the Pacific Coast, have practically completed their concrete work on the Longview plant. Concrete forms have already been removed from most of the new buildings and some of the structures have already been dressed up in bright white paint.

When completed, the Pulp Department of Weyerhaeuser at Longview will add an impressive array of buildings to the already extensive lumber and allied wood-using industries already operated by this pioneer timber firm on its mile-square waterfront site. The location is a most strategic one from the industrial standpoint, for it is on the direct route of all deep sea shipping entering the Columbia River and calling in the Portland trading territory.

Further, the Longview location is central for tapping the huge log basin served by the Columbia and its major tributaries, the Willamette, Cowlitz, Kalama, Lewis, and other streams. The supply of logs coming into this territory in the natural course of lumber production, and available for pulp manufacture, is virtually unlimited.

The completed pulp mill will reveal a straight line operation fronting the river, with a huge modern filter plant at one end and other process steps strung out in proper sequence following.

The management has been deliberate in its planning and not possessed of any mania for speed alone. It has weighed the experiences of pulp mills previously constructed on the Coast and elsewhere by other organizations and is incorporating the most desirable features in its own mill. As the technique of pulp mill design is continually progressing, it is rather safe to assume that the Longview mill will be, when completed, one of the most modern and finest to date.

O. C. Schoenwerk, principal figure in the design and construction of the Olympic Forest Products Company's mill at Port Angeles, Washington, is in charge of the design of the Weyerhaeuser mill.

Among other features the Longview mill will incorporate a vacuum dryer and a Chemi-pulp system.

At the present time the acid towers are complete in essentials, the buildings are for the most part up, and several cars of machinery have already arrived for installation.

Among other things, the Weyerhaeuser mill will have a system for treating its waste liquors before discharging them to stream, in order to minimize danger of pollution and injury to fish life. Approval of these plans was given by state authorities before construction was begun.

Weyerhaeuser Pulpers Off to Super's Convention

Robert B. Wolf, manager of the pulp division of the Weyerhaeuser Timber Company, Longview, Washington, and Ben Larrabee, who will be in charge of production at the new mill, hied themselves off to Dayton, Ohio, in June to attend the annual convention of the American Pulp & Paper Mill Superintendents' Association in that city.

Both men have for a long time been interested workers in association affairs revolving around the pulp and paper industry.

For Mr. Larrabee in particular, getting back to a Super's convention is getting back into home territory, for he was a most active worker in that association when he was located in the East.

Leadbetter Earnings Reported

First quarter earnings considerably in excess of earnings for the same period in 1930, are reported for the period ending March 31, 1931, by the Columbia River Paper Company, holding corporation for the Leadbetter paper mill interests including the Oregon Pulp & Paper Mill at Salem, Oregon, and the Columbia River Paper Mills at Vancouver, Washington.

"All the mills continued in reasonable production," reports Mr. Leadbetter in a letter to shareholders. "This volume of production together with the constant and successful efforts to decrease the cost of production by rigid economies, including reductions in salaries and wages of all officers and other employes, and reductions in the price of raw materials, are responsible for the fact that your companies have been able to make a favorable showing, despite the depression existing in the industry."

The Salem mill earned $129,157 during 1930, after paying all interest charges and providing a depreciation reserve of $201,070, Mr. Leadbetter's report shows. In the same period Columbia River Paper Mills made a net after depreciation and interest of $137,831. Both companies paid dividends on their preferred stock, the Salem mill distributing $64,000 to shareholders and the mill at Vancouver $60,000.

In the first quarter of 1931, the Columbia River Paper Company of Florida, a subsidiary of the Columbia River Paper Company, earned a net of $11,662 while the California-Oregon Paper Mills of Los Angeles, earned a net of $5,179.

Propose Big Pulp Mill on Vancouver Island

There's a big pulp mill project looming up on the West Coast of Vancouver Island, at Port Renfrew, British Columbia, which is approximately across the Straits of Juan de Fuca from Neah Bay, Washington, the most northwesterly point in the United States.

Activity in the Port Renfrew project centers about B. A. Grover, about whom very little can be learned directly. Mr. Grover has been making his headquarters, when in Seattle, with U. H. Fillio at 627 First Avenue. Mr. Grover is said formerly to have been in the cattle business in Texas.

While the company has not as yet been incorporated, it is understood that it intends to do so under the name of the Lone Star Timber, Lumber & Pulp Company. In British Columbia no articles of incorporation have been filed, but it is learned that the promoters have reserved the name Lone Star Lumber Company with view to incorporation later.

It is learned that the promoters have acquired some 592,000,000 feet of timber. This bloc, with rights on other accessible government timber, would form a nucleus for an extensive wood-using industry at Port Renfrew, comprising, in addition to a 200-ton pulp mill, a lumber mill, shingle factory, veneer factory, pole and piling yard, and other units.

The B. C. government is said to be taking an interest in the project. To improve the shipping facilities at Port Renfrew a breakwater has been discussed, and for this construction Mr. Grover is said to have offered aid.

Nothing can be learned about Mr. Grover that would shed light on what financial interests are behind the project. It is definitely known that some pulp and paper interests of the highest standing have carried out preliminary negotiations with the Grover group, but it is learned that overtures of financial assistance have been steadfastly declined. The Grover interests have drawn up a financial prospectus which involves as a main item a bond issue of $10,000,000.

Cropper In Charge of Pulp at Port Angeles

George Cropper is now in charge of pulp production at the new 175-ton bleached sulphite pulp mill of the Olympic Forest Products Company at Port Angeles. He succeeds Ben Larrabee, who resigned recently to join the Pulp Division of the Weyerhaeuser Timber Company, now building a bleached sulphite pulp mill at Longview, Washington.

Mr. Cropper has several years of experience in pulp manufacture. He has spent a number of years in Port Angeles, coming up thru the ranks of the chemists at the newsprint mill of the Washington Pulp & Paper Corporation located in the same city. With the beginning of production at the new Olympic mill last year, Mr. Cropper transferred his activities to that plant.

That's a Long, Long Time

'Way back in 1901 the late Peter Brown, whose name has gone down in large letters as one of the pioneer paper makers on the Pacific Coast, took an option on an old straw paper mill erected at Antioch, California, by Kenney & Sons. The mill was then standing idle, but a few months later its industrial life was revived.

A matter of some months after Mr. Brown took over the Antioch mill C. N. Meyers came to work for the old gentleman. Mr. Meyers has been at the Antioch mill ever since, today occupying the position of mill superintendent. Unless we figure it wrong, it's just about three score years that Mr. Meyers is celebrating now, an excellent record of service.

At the right: M. R. Higgins, Crown Zellerbach Corporation, with Mrs. Higgins, are accepting congratulations from Clyde Swick, Graham Paper Company, and others. The occasion is the wind-up of the semi-finals in the Del Monte golf tournament, held in May. Mr. Higgins has just beaten Joe Coffman, Los Angeles association secretary, who is seen at Mr. Swick's back.

Swick Looks Over New St. Helens Machine

C. E. Swick, San Francisco, Pacific Coast representative for the Graham Paper Company, was a Portland visitor early this month. Accompanied by C. E. McKillop, who is in charge of the company's Portland office, Mr. Swick made a side trip to St. Helens to confer with Max Oberdorfer, head of the St. Helens Pulp & Paper Company, and to inspect the newly-installed paper machne. The latter is expected to swing into production sometime this month. A trial run was made late in May.

George Rainey, until recently night boss at the Columbia River Paper Mills at Vancouver, Washington, is understood to have joined the St. Helens organization as assistant superintendent.

Rumor B. C. Pulp Project

Possibilities of establishing a pulp mill near Prince Rupert, B. C., in the early future are being investigated by Howard Cole, New York capitalist and owner of extensive timber properties in British Columbia, who recently paid a visit of inspection to his pulpwood limits on Queen Charlotte Island, accompanied by Charles Steele, president of the Massett Timber Company. The latter company is owner of the Buckley Bay Lumber Company at Buckley Bay.

It is proposed that the timber limits on Massett Inlet, in Queen Charlottes, and a group of timber limits near Usk on the British Columbia mainland, shall be taken over by a corporation recently organized for that purpose to establish a mill near Prince Rupert.

There is one of the most important stands of spruce in British Columbia on the Queen Charlotte Islands. Usk is at present headquarters for a large trade in poles and ties, it being located on the main line of the Canadian National Railways (Grand Trunk Pacific).

"There is nothing very definite about this," said Mr. Cole. "However, it will come some time; you may be sure of that. I am not in the company yet and my object in visiting the Queen Charlottes at this time was to make an inspection of the timber at first hand. On my way east I intend to discuss the proposition with interests in Minneapolis who have asked me to join the venture. After I have seen them we will know where we are."

Mr. Cole is already interested in several pulp enterprises on the coast, and owns much timber on Vancouver Island.

Smith McLandress, Fox River Paper Company, who has returned East after spending several weeks in Pacific Coast territory.

Building Insulating Board Mill in Islands

The Hawaiian Cane Products, Ltd., organized at Honolulu recently for the purpose of converting the refuse of sugar mills into insulating wallboard, expects to complete its $1,750,000 factory at Waiakea, near Hilo, island of Hawaii, by next December. This will be the first concern in the Pacific area to undertake manufacture of cane pulp products.

Its research and development department has sent to the East samples of Hawaiian bagasse for tests to determine whether they will yield the proper chemical pulp necessary in the manufacture of rayon. The corporation plans to produce insulating board products of several grades.

H. Stuart Johnson, former superintendent of the Honolulu Rapid Transit Co., has been employed to make a survey of the Hawaiian market in connection with possible new uses of board manufactured from bagasse, one of the proposed new uses having to do with the construction of laborers' houses on the sugar and pineapple plantations.

Studies are also to be made to determine whether the company can manufacture fiber containers for the shipment of canned pineapple. Between ten and twelve millions of these containers are used annually by the Hawaiian pineapple industry.

W. F. Goldsmith, former chief consultant for Arthur Little & Co. on pulp production and fibreboard manufacture, has taken a position with Hawaiian Cane Products, Ltd., as head of its research and development department. He will probably have his headquarters at San Francisco so that his work will tie in with that of the manufacturing and marketing departments. His assistant, a technical expert, will be selected soon and will have charge of the extensive research laboratories which the corporation will establish at Hilo.

It is reported that the company is seeking the services for two years of D. Manson Sutherland, one of the world's foremost authorities on wallboard manufacture, as consulting engineer on technical and marketing problems.

Mr. Sutherland has been actively interested in the development of wallboard from various materials for more than 20 years, and maintains expensive research laboratories at Trenton, N. J. Because of his work with bagasse, which is to be the basis of all of the company's products, the directors believe he is the most qualified person available to assist in solution of development and research problems.

Leo C. Monahan of San Francisco has been engaged to investigate marketing channels, report on policies and assist in the formation of selling policies, and Walter C. Miss of St. Paul has been selected as production operations manager.

The company has entered into contracts with the Hilo Sugar Co., Waiakea Mill Co. and Olaa Sugar Co., all on the island of Hawaii, for furnishing bagasse to the factory. The entire bagasse outturns of Waiakea Mill Co. and Hilo Sugar Co. will be taken, but only a portion of that of Olaa. It is estimated that the company will obtain 90,000 tons of bagasse from these plantations annually. Arrangements have been made with Hawaii Consolidated Railway to handle shipments of bagasse, fuel oil and finished wallboard. A complete electric plant for light and power, to cost $165,000, will be installed at the factory. The company is capitalized at $2,250,000.

In past years millions of tons of bagasse from Hawaiian sugar mills have gone to waste, and Hawaiian Cane Products, Ltd., now hopes to utilize a considerable portion of the annual outurn, manufacturing from it products which, it is believed, will set up a large and profitable new industry for the territory. Some of the bagasse has been burned under the sugar mill boilers, and some has been used for stock feed, but not until now has any step been taken to turn this by-product of the sugar industry into a worthwhile commodity with an extensive market.

With all of the principal plantation agencies owning stock in Hawaiian Cane Products, Ltd., it may be considered, in many respects, as a part of the island sugar industry. Its activities are going to be watched closely from the standpoint of the development of numerous important products.

New Line-up On Powell River Directorate

Two new members have been added to the board of directors of the Powell River Company—R. Bell-Irving, mill manager, and James H. Lawson, who for several years has been the company's legal advisor. Mr. Lawson becomes secretary of the company.

An interesting feature of this change in the company directorate is the fact that both these men have been actively connected with the affairs of the company for many years. A tendency towards placing the responsibility of directorship in the hands of the active and resident executives is thus indicated.

Last year, R. H. Scanlon, assistant resident manager at Powell River, took his place among the directors. He has been associated with the company since its inception, arriving in Powell River to take part in the clearing of the sit in 1910.

Anson S. Brooks has been re-elected president, with Edward Brooks and Paul A. Brooks as vice-presidents for another term. S. D. Brooks and A. E. McMaster continue as executive vice-president and general manager respectively. F. T. Griffiths and R. H. Scanlon have been reappointed to the directorate.

Anson Brooks is a brother of the late Dr. Dwight F. Brooks, one of the founders of the company, and for many years the president. He has been associated with the Brooks-Scanlon organizations since their inception in 1873. He was affiliated with Dr. Brooks and the late Michael J. Scanlon when they first considered the erection of a paper mill on this coast.

Joseph Falconer has been appointed treasurer of the company. He has been with the company for 18 years and latterly has served as assistant resident manager at Powell River.

T-R-A-D-E - T-A-L-K

Devoted to the Paper Trade of the Western States

Lynch Sells Interest to Buckley

E. W. Buckley, president of the Buckley-Lynch Paper Company, Los Angeles, announced recently that he had purchased the interest of C. N. Lynch, secretary-treasurer, in the company. For the time being the name of the concern will be unchanged.

Mr. Lynch has returned to Chicago, where at one time he was vice-president of the La Salle Paper Company. His place in the Buckley-Lynch Paper Company has been taken by R. S. Jones, who has been connected with the company for some time. Mr. Jones was formerly associated with Mr. Buckley in the Western Pacific Paper Company, Los Angeles.

B. C. Wholesaler Expands

Barber-Ellis, Ltd., wholesale paper dealers and envelope manufacturers of Vancouver, B. C., plan construction of a $75,000 warehouse between Nelson and Smythe Streets and a start will be made at once, according to C. G. Ellis, managing director of the company, who visited the coast recently from eastern Canada, where the company operates several other branches.

Plans for the structure are now being prepared and construction will be started on July 1. The site has a frontage on Homer Street and is 120 feet deep. The building will be four stories high, of modern reinforced concrete.

Barber-Ellis, Ltd., has been doing business in British Columbia with head office in Vancouver for 19 years. Lorne D. Graham is managing the company's interests on the coast.

Zellerbach, Los Angeles, Adds Specialty Department

Zellerbach Paper Company, Los Angeles, has added a specialty department similar to the one now operating at the main office, San Francisco. The new department will be in charge of Charles Culp, well known in the specialty line in Detroit. A line of cellophane wraps, boards, and fancy papers will be carried.

Zellerbach Paper Company, Los Angeles, have also added two new lines of Warrentown book—Cumberland dull and Lustro Brilliant dull. These papers are manufactured by the S. D. Warren Paper Company, Boston, Massachusetts, from pulp furnished by the new Olympic Forest Products mill at Port Angeles, Washington.

* * *

Louis Colton, vice-president and director of purchases, Zellerbach Paper Company, San Francisco, was a recent visitor to the Los Angeles branch of the firm, on his way East.

* * *

General Paper Co., Los Angeles, has added a new line of brilliant colored laid book paper—Britone book, in white, and five brilliant colors, manufactured by the Jessup & Moore Paper Co., Philadelphia, Pennsylvania.

* * *

According to all reports the new credit plan adopted by the Southern California wholesale paper dealers recently is working out very well.

TWO OF DEL MONTE'S DEMON DIVOT DIGGERS

Harold Zellerbach (left), Zellerbach Paper Company, and Andrew Christ, Western Waxed Paper Company congratulate each other as runner-up and champion respectively of the 1931 tournament.

One More Pitcher On Andrew's Shelf

Andrew Christ, Jr., who makes them all look sick when it comes to golf, has rearranged the trophies on his mantel to make room for one more silver pitcher, the latest acquisition won in the championship flght at Del Monte last month. Mr. Christ in "peace" times manages the Western Waxed Paper Company's plant at Oakland.

Jaggard Visits Hammermill at Erie

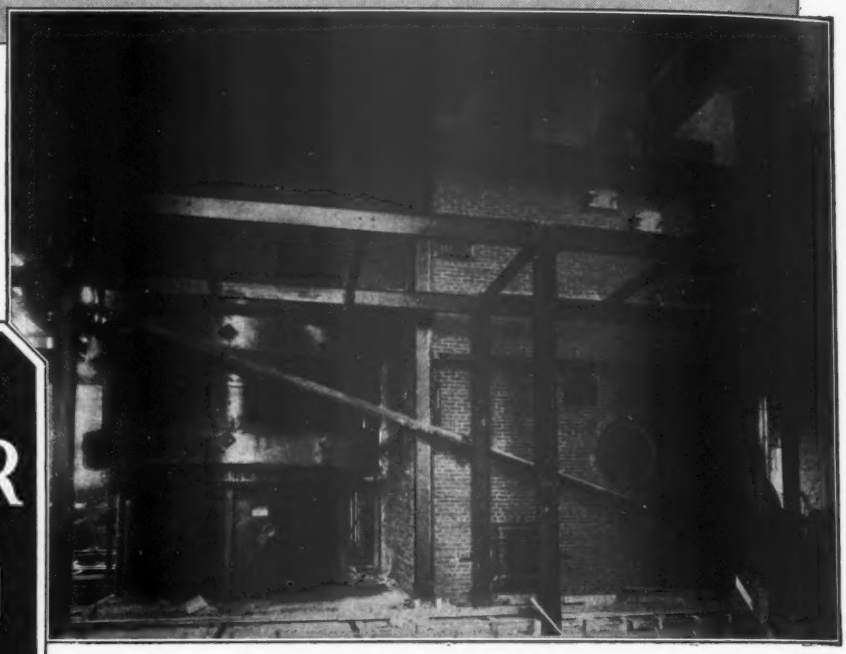
B. P. Jaggard, representative of Hammermill Paper Company and Grays Harbor Corporation, was on a business trip East during the month of May. Most of his time was spent at the Hammermill plant in Erie, Pa., with a visit to its New York office before returning to San Francisco.

The Oregon Pulp & Paper Company last month started up a No. 4 machine on glassine. The machine was an old cylinder type which has been standing idle in the mill for a number of years. Recently it has been converted into a fourdrinier type and now it has resumed its place in the production line as business has been secured to take up the slack. The Oregon mill has been operating at exceptional capacity practically all thru the current "depression."

Mill Executives Who Want To Save $5 to $7 Per Ton On Pulp Cost

CAN SECURE SUCH A SAVING BY INSTALLING AND OPERATING THE MODERN DEPENDABLE

ROSS-WAGNER Recovery System



View of Ross-Wagner Furnaces and Boiler

In any section of the country today, a saving of from $5 to $7 per ton of pulp is of tremendous importance. Particularly in the northern part of the United States, where high steam costs prevail, mills should investigate this modern recovery system.

Consider that the average quantity of steam generated by the Wagner Furnace per ton of pulp is 10,000* You need only multiply your steam cost per thousand pounds by ten to determine for yourself the value of steam which would be generated from waste heat per ton of pulp in *your* mill by this system.

With thirty Ross-Wagner Recovery Units already operating in prominent low cost mills throughout the industry, the economic advantage is not a theory but a fact.

*(Average for 20 months in a Western mill).

Any executive who will investigate and analyze the possibilities from operation of a Ross-Wagner System will prove to his own satisfaction that replacement of existing equipment is fully justified from a standpoint of economy alone — not to mention the many other advantages that this modern scientific recovery system afford.s

An Invitation

When you next visit or stop over in New York, plan to see our model of the Wagner Furnaces in motion. It will give you a clear understanding of the scientific principle of its design and operation. you are cordially invited to view this interesting exhibit in our New York office.

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HEATING—VENTILATING—DRYING

Portland Firm Develops Paper Berry Box

A new product—a paper berry and fruit box—manufactured by the F. C. Stettler Manufacturing Company of Portland, Oregon, is meeting with widespread popularity among berry producers altho it has been on the market but five weeks, according to C. A. Morgan, manager of the folding box department of that company.

The new box, invented at the Stettler plant, is made of paraffined board, in standard sizes. It is waterproof, odorless and will not split or crack, and keeps fruit in exceptionally fine condition, Mr. Morgan said. Arrangements are being made to patent the new container.

Cantine Visits New Camas Converting Plant

Holly R. Cantine of The Tissue Company, Sauguerties, N. Y., spent some time in Camas, Washington, late in May where his company has recently installed a converting plant for the manufacture of high grade paper napkins. The company has leased a port on the big new converting plant building recently erected by the Crown Willamette Paper Company. Napkin machines have been installed to convert paper manufactured by the Crown Willamette Paper Company for distribution on the Pacific Coast. Charles H. Coons, from the New York plant of The Tissue Company, is directly in charge of getting the new plant into production.

Longview To Stage "Rolleo"

"The Rolleo is going to be bigger and better than ever this year", comes the word from Longview, Washington, the only city in the world to stage such an event dedicated to that picturesque and typically northwest character—the Lumberjack.

With the world's two largest lumber mills in its confines and with one of the richest stands of timber in the United States in its immense back yard, Longview is duly fitted to stage a celebration such as was originated two years ago. At this big Lumberjack carnival the sports, amusements and mannerisms of the logging camp are in vogue. Paul Bunyan, the gargantuan idol of every woodsman, is reincarnated to rule as boss of the camp.

Because log rolling is one of the prime requisities to any Lumberjack celebration the name "Rolleo" was coined fittingly to describe the festivities.

There will be contests galore, giving opportunity for the woodsmen to display their power in tree-topping, log bucking, log jousting, log rolling and whatnot.

The "Rolleo", which will be held this year on July 3rd and 4th, is a show unique.

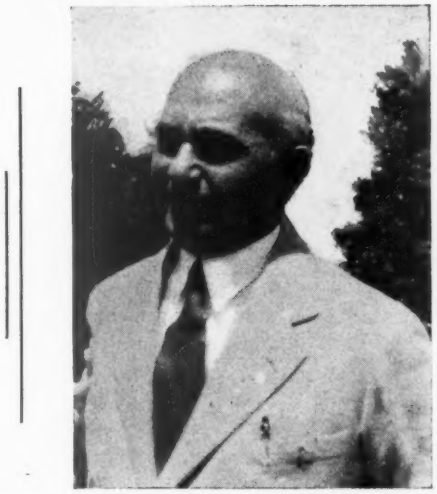
New Name on Spaulding Board

O. M. Allison, a Portland attorney with offices in the Oregonian building, has been named a director of the Spaulding Pulp & Paper Company at Newberg. Mr. Allison succeeds A. J. Lewthwaite, also of Portland, who resigned recently.

The Portland offices of the Spaulding company were moved last month from the American Bank building to 335 East Main Street.

Golden Joins Weyerhaeuser

Mike Golden is one of the most recent recruits to the Pulp Division staff being organized by R. B. Wolf to operate the new 150-ton bleached sulphite pulp mill of the Weyerhaeuser Timber Company at Longview, Washington. Mr. Golden was formerly with the Olympic Forest Products Company at Port Angeles, Washington.



Ed. F. Herrlinger, Gummed Products Company, Cincinnati, demonstrating one of the perpetual smiles with which he graced the recent paper trade convention at Del Monte.

Alaska Road Hints Paper Development

Two hundred thousand dollars have been set up by the U. S. Forest Service, from the Forest Highway Fund, for reconstruction of the Juneau-Thane unit of the Glacier Highway system in Southeastern Alaska. Work will be launched this summer.

The plans call for the construction of an 18-foot standard highway, the first of that width ever to be built in the Territory. The route will follow approximately the present right-of-way of the old Thane Road until the causeway at Thane is reached. At that point the new route will follow the bench above the machine shops, eliminating the trestle work that would be necessary by sticking to the beachline.

The announcement revives interest in the paper mill which has been projected in Southeastern Alaska for the past four years. George T. Cameron, publisher of the San Francisco Chronicle, with associates, holds certain timber and hydro-electric power concessions in the vicinity of Juneau looking toward the eventual construction of a 200-ton newsprint mill and a water power development adequate to supply such an industry.

Following detailed timber and stream surveys extending over three years the Cameron group last year obtained federal sanction to proceed, but the collapse of the news print market was undoubtedly a chief contributing factor in delaying actual construction.

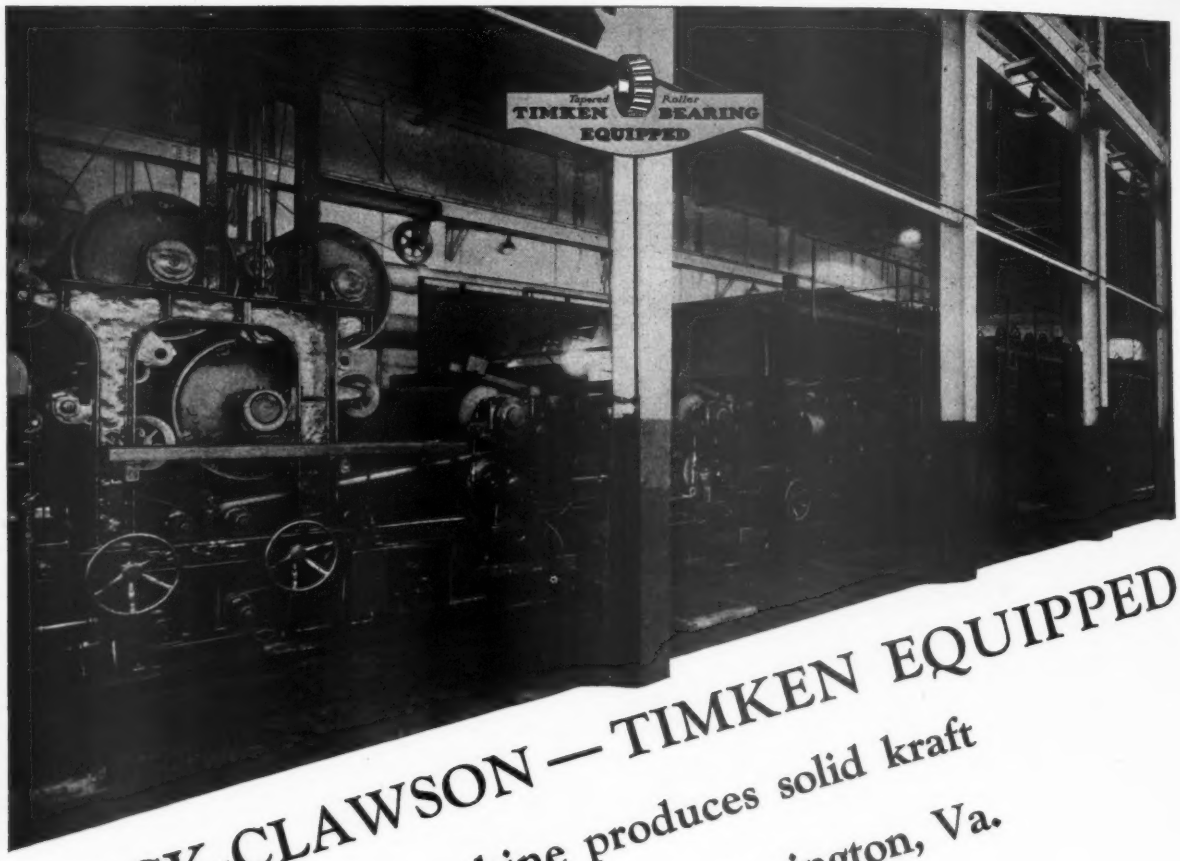
While announcement of a definite site for the Cameron mill has been studiously avoided, popular street gossip has already located the mill at Thane, due to some natural advantages and its proximity to Juneau, one of the two major population centers in Southeastern Alaska, which could readily be tapped as a labor reservoir.

Sulphite Superintendent at Washington Mill

O. A. Caüvel has recently been made sulphite superintendent at the 300-ton news print mill of the Washington Pulp & Paper Corporation at Port Angeles, Washington. He was formerly head chemist.

Harry Baxter Retires

Harry Baxter, construction engineer for Crown Willamette Paper Company for many years, has retired from the active service on pension.



BLACK-CLAWSON — TIMKEN EQUIPPED

This 7-cylinder machine produces solid kraft test liner at the Westvaco plant, Covington, Va. All cylinder molds, couch rolls, felt rolls, primary press rolls and top press rolls are mounted on Timken Bearings to minimize the friction load, save power, reduce wear and cut maintenance. Timkens tame the tough jobs in all Black-Clawson cylinder machines and Fourdriniers.

THE TIMKEN ROLLER BEARING COMPANY, CANTON, OHIO

TIMKEN Tapered Roller BEARINGS

When writing THE TIMKEN ROLLER BEARING CO., *please mention* PACIFIC PULP AND PAPER INDUSTRY.

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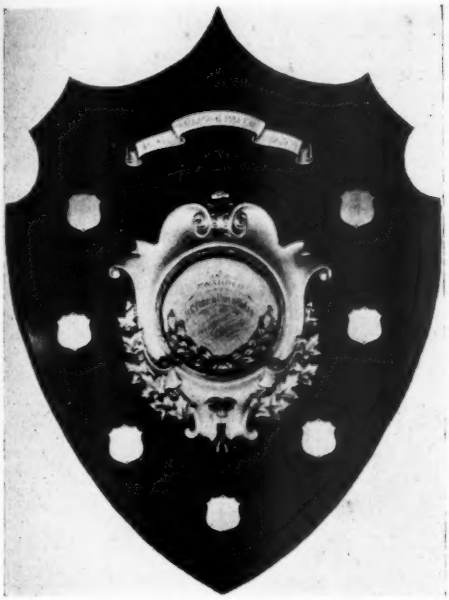
The best safety device known is a careful man

Pacific Coast Division
Pulp and Paper Section

NATIONAL SAFETY COUNCIL

ROBERT H. SCANLON
Regional Director
Powell River Co., Ltd.
Powell River, B. C.



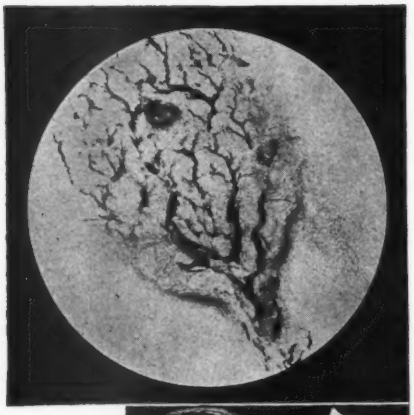
The mills of British Columbia have taken the lead in stimulating accident prevention interest by instituting an inter-mill SAFETY competition. At the recent annual SAFETY meeting participated in by Pacific Coast mills at Powell River, Mr. W. L. Ketchen, plant manager of the B. C. Pulp & Paper Company's pulp mill at Port Alice, spoke in favor of inter-mill competition. Shortly following the Powell River meeting the B. C. Pulp & Paper Company announced that it would offer a SAFETY shield to be competed for by British Columbia mills and awarded annually to that mill showing the best record. The spirit of the plan was promptly entered into by other mills of the Province and the rules governing the competition have been worked out. The idea is heartily commended as one which will stimulate a greater interest in SAFETY practice. The B. C. Pulp & Paper Company is to be congratulated for taking the initiative in an idea which could undoubtedly be applied with profit to other state-wide or Coast wide competitions. The shield is shown on this page.

STATEMENT OF ACCIDENT EXPERIENCE—APRIL, 1931

(Mills in State of Washington)

COMPANY—	Hours Worked	Total Accidents	Frequency Rate	Days Lost	Severity Rate	Standing
Everett Pulp & Paper Co.	76,536	0	0	0	0	1
St. Regis Kraft Co.	36,317	0	0	0	0	2
Fibreboard Products, Inc., Sumner	34,396	0	0	0	0	3
Fibreboard Products, Inc., Port Angeles	33,632	0	0	0	0	4
Rainier Pulp & Paper Co.	33,268	0	0	0	0	5
Pacific Straw Paper & Board Co.	19,376	0	0	0	0	6
Grays Harbor Pulp & Paper Co.	55,896	1	17.9	4	.072	7
Crown Willamette Paper Co.	257,358	7	27.2	211	.820	8
Longview Fibre Co.	98,126	3	30.6	90	.917	9
Inland Empire Paper Co.	64,454	2	31.0	120	1.862	10
Puget Sound Pulp & Timber Co., Everett	58,768	2	34.0	35	.596	11
National Paper Prod. Co.	80,037	3	37.3	63	.784	12
Puget Sound Pulp & Timber Co., Anacortes	25,992	1	38.4	31	1.193	13
Washington Pulp & Paper Corp.	70,224	3	42.7	32	.455	14
Shafer Box Co.	13,254	1	75.4	9	.679	15
Columbia River Paper Mills	48,261	4	82.9	46	.953	16
Puget Sound Pulp & Timber Co., Bellingham	27,969	3	107.3	12	.429	17

The following mills not reporting—Pacific Coast Paper Mills; Cascade Paper Co., not in operation; Tumwater Paper Mills, not in operation.



IMPORTANCE OF CONTROL IN CHLORAMINE APPLICATION

CONTROL and elimination of slime are essential to economical mill operation, due to its harmful effects on the stock and its clogging of the system. Chloramines are the most satisfactory agent for the purpose because they react slowly with the fibre. They can be used in relatively small quantities and still will leave a sufficient residual for slime control. Chlorine alone, on the other hand, reacts rapidly and a residual cannot be maintained in the circulating system.

Careful attention to seasonal fluctuations in bacterial activity will make great savings possible in the use of chloramines: in the winter months slime growth is very slight, and only a relatively small residual is necessary to keep the system clear. Application should never be stopped entirely, however, as this will permit the slime to build up very slowly through the pipe lines, and with the coming of spring the entire elimination problem will have to be faced again.

It is highly desirable to maintain a test control system for chloramine application. The same equipment available for chlorine application for bleaching purposes will serve to test for chloramines. The savings thereby effected through maintaining the absolute minimum chloramine residual will in practically every case justify the expense of the equipment.

The Great Western Laboratories will be glad to answer inquiries with detailed information on chloramines, and to assist in experiments and installations.

GREAT WESTERN ELECTRO-CHEMICAL CO.

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SEATTLE · · · LOS ANGELES

New Types
New Models
New Machines

EQUIPMENT

Manufacturers of, and dealers in, equipment used by pulp and paper mills, board manufacturers, converting plants, paper merchants, or any other branch of the industry may make their announcements in this department.

New Dealers
New Branches
Appointments

Dorr and Oliver-United Join Hands

John Van Nostrand Dorr and Edwin Letts Oliver have announced a union of the businesses and assets of the Dorr Company and Oliver United Filters Inc. This union was brought about on June 1st by the formation of a new company, to be known as Dorr-Oliver Corporation, under the joint management of Messrs. Dorr and Oliver.

Dorr-Oliver Corporation will function through its two, wholly-owned operating units, a new Door Company, Inc., and a new Oliver United Filters Inc. Mr. Dorr and Mr. Oliver will head their respective companies and with the aid of their present executive and technical staffs, will continue on behalf of Dorr-Oliver Corporation, the businesses which they have individually initiated, organized and expanded so successfully in the past.

The businesses of the two uniting companies are of long standing and complementary. The Dorr Company occupies a leading position in the fields of agitation, classification and sedimentation through its equipment, built up around the original inventions of its founder, Mr. Dorr. The Oliver United Filters Inc. occupies a similar position in the field of filtration through the inventions of Mr. Oliver and E. J. Sweetland.

The growth and success of The Dorr and the Oliver United businesses have been due, to a great extent, to constructive policies of constant development and research and a broadening of fields of usefulness in anticipation of the constantly changing needs of the basic industries which they serve. Their fields are related so closely from a technical standpoint, that the joint use of technical information and the carrying on of joint research and development is expected to result in more effective development and improvement of the equipment and processes which they have contributed to industry.

Both companies have built up technical staffs and manufacturing facilities at strategic locations throughout the world for the carrying on of their businesses which have grown to international proportions. The common use of these established facilities should give fuller, prompter and more efficient service to clients.

De Laval Pumps For Heavy Liquids

Pumps for handling liquids carrying solids in suspension are described in a catalog of "clogless pumps", issued by the De Laval Steam Turbine Company, Trenton, N. J.

These pumps are characterized by horizontally split casings, which give quick access to the interior upon lifting the casing cover and without removing either the suction of discharge piping, large, open and direct passages, including those through the impeller, renewable parts at points subject to wear and running joints arranged for sealing with water at a pressure somewhat higher than that generated by the pump, thus preventing the entrance of abrasive materials.

The pump is built with either enclosed or open impeller, which is overhung upon a shaft resting in two ball bearings spaced well apart. One of the ball bearings is of the thrust type, capable of taking all unbalanced thrust, including the weight of the impeller and the shaft when the pump is installed vertically.

S. K. F. Personnel Changes

S. E. Seagren is now a vice-president of the S. K. F. Industries of California, Inc., with permanent headquarters in the company's San Francisco offices at 221 11th Street. Mr. Seagren has been with the company for a long time and his present position has been attained thru recognition of his services and experience. Mr. McLaren, formerly attached to the San Francisco offices, has recently been made a district manager of the company's offices at Portland.

V. D. Simons, engineer, identified in recent years with the construction of several major pulp and paper enterprises on the Pacific Coast, has recently completed a survey of 23 large industrial plants to determine the feasibility of building joint power plants where electric energy would be the primary production and heat for the factory the by-product, thereby insuring a steady source of power for base load purposes.

Mr. Simons contends that for a slight additional cost in equipment many industries could profitably produce enough heat and electricity for their own use and have surplus power for sale at a cost lower than average utility generating stations can produce.

As an example Mr. Simons points to the Munising Paper Company at Munising, Michigan, which last fall put such a plant into operation. He recommends that such joint plants be owned and operated by the utility companies under an arrangement with the manufacturer whereby the latter is assured heat and power cheaper than he could produce them for his own use.

E. D. Jones Announcement

The E. D. Jones & Sons Company of Pittsfield, Massachusetts, wishes to announces that the sales connection with the Fidalgo Drying Systems, Inc., of 122 East 42nd Street, Ntw York City, in effect during the past few months, was terminated on April 1, 1931.

Announcement

R. D. Kehoe has made the following announcement to Pacific Pulp & Paper Industry:

"Inquiries for Fidalgo Dryer and Newnap Felt Conditioner, Fidalgo Shredder, Consistency Regulator, Metering Devices, Screens, Screw Presses, etc., should be addressed directly to Fidalgo Drying Systems, Inc., office at 122 East 42nd Street, New York City."

The progress which has been made in water works pumps since the year 1913 is aptly illustrated in a leaflet distributed by the De Laval Steam Turbine Company, Trenton, N. J., describing the De Laval pumps at Ross Station, Pittsburgh, Pa.

Tom Warner Retires After 53 Years

Seventy-seven years young, Tom Warner, veteran paper maker, has retired from active service after serving 53 years in the continuous employ of the Crown Willamette Paper Company and predecessors of that organization.

There's a mark to shoot at!

Just a few years back, with only forty-nine years with the Crown organization, Mr. Warner had his mind set on winning the much coveted service pin awarded by that organization for a half century of faithful and continuous service. Well, young Tom made the halfway mark and the company made a special event of it

TOM WARNER retires with enviable record of service with CROWN WILLAMETTE PAPER COMPANY.

by asking him down to San Francisco headquarters. There Tom was special guest at an honorary luncheon and Louis Bloch, company president, in person, pinned the 50-year pin on Tom's coat.

After getting to the prized "50" mark Tom just ran up an extra three years to be sure of the mark. He is willing to challenge most anyone to match his record of continuous service.

Throughout his long career in the paper industry, Mr. Warner has witnessed a remarkable progress in manufacturing technique. One of his early jobs about the paper mill was to fill baskets with wood chips and hoist them by hand to the digester bins where another man waited to empty the contents. That's a far cry from today's continuous conveyor belts.

Mr. Warner has added conspicuously to the industry's progress by perfecting Warner's equalizer, a device for controlling consistency of stock going to the paper machines. The equalizer is used extensively in Pacific Coast paper mills.

Staff Changes at West Linn

E. A. Leighton, an employe of Crown Willamette Paper Company at West Linn, Oregon, for over 30 years, the last ten years in charge of all maintenance at the plant, retired from the active service on pension June 1. Mr. Leighton intends to go on his farm in Eastern Oregon. Fred Simmonds, formerly superintendent of Pacific Mills, has joined the staff at West Linn, taking over Mr. Leighton's duties.

Propose Paper Mill for Portland

Reports that a paper mill is in prospect for Portland received a fresh impetus early this month, when it was learned from confidential sources that plans and specifications for a two-machine mill have been completed and that an option on an East side site owned by local capitalists has been taken. The mill would be a bleached specialty plant, making many grades of paper required by a large Pacific Coast paper house to whom the output would be contracted.

Plans call for the purchase of a recently-built idle Michigan paper mill which, it was said, had been unable to compete in the section in which it is located. The machines are said to be about the same size as those in use by the Columbia River Paper Company at Vancouver, Washington.

A filter plant would be installed to treat water for use which would be obtained from the Willamette River. Pulps would be secured under long time contracts with Pacific Coast pulp mills. Spaulding Pulp & Paper Company is mentioned as a source, where addition of a bleach plant has often been contemplated.

Local capitalists, it was asserted, have joined with the original owners of the Michigan plant to finance the moving of the latter's equipment to Portland, construction of the buildings, docks, and machinery installation. Incidentally, the mill would have everything to make it one of the most efficient in the West, with its own dock and railroad spur, provided present plans are followed.

Weyerhaeuser Consolidated Inland Lumber Interests

A giant merger of Inland Empire lumber companies was effected in early June with the organization of the Potlatch Forests, Inc., a $20,000,000 corporation.

The consolidation included the Clearwater Timber Company, the Edward Rutledge Timber Company and the Potlatch Lumber Company. Combined, these control one of the largest stands of white pine timber in the country and rank as the largest producer of western red cedar poles in the United States.

J. Philip Weyerhaeuser, Jr., of Lewiston, Idaho, was named president of the new giant at an organization meeting at Tacoma. Laird Bell, H. J. Richardson and Wayne C. Gilbert were elected vice presidents. George F. Jewett of Coeur d'Alene was elected treasurer, George R. Little, secretary, H. L. Toresen assistant secretary and assistant treasurer, and C. J. McGeough assistant secretary. Philip Weyerheauser, Fred K. Weyerhaeuser of Spokane, F. W. Reimers, Mr. Jewett and Mr. Bell were elected members of the executive committee.

Individuals and interests brought together in the new company include T. J. Humbird of Spokane; F. S. Bell of Winona; William Musser of Muskette, Minn.; R. D. Musser of Little Falls, Minn.; the Laird-Norton interests of Winona; Dr. E. P. Clapp of Everett, the Denkmann estate of Rock Island, Ill.; Stanley Joyce of Chicago, and the various members of the Weyerhaeuser family.

Officials of the corporation, in addition to Mr. Weyerhaeuser who is president, are John Kendall of Spokane, vice president; George Little of Winona, Wis., secretary, and G. S. Jewett of Coeur d'Alene, treasurer.

For the pulp industry, this consolidation holds particular interest because of possible future departure into pulp manufacture in the Inland Empire region by the Weyerhaeuser group. Such entry has been frequently discussed in street gossip, being bolstered by the fact that Weyerhaeuser has already entered the pulp field on the Coast by building a sulphite mill in connection with its extensive lumber operations at Longview, Washington, in the Columbia River basin. The Longview mill will be completed in a few months.

Further, the Weyerhaeuser interests recently completed a consolidation of lumber interests in the Willapa Harbor district in Southwestern Washington, and eventual establishment of a pulp mill in this district has also been much discussed recently.

The Paper and Pulp Industry in March, 1931

According to identical mill reports to the statistical department of the American Paper and Pulp Association from members and cooperating organizations, the daily average of total paper production in March decreased 1% under February but was 13% under March, 1930. The daily average wood pulp production in March was 1% under February, 1931, and 25% under March, 1930.

Compared with March a year ago, the daily average production registered a decrease in the following grades: Newsprint, uncoated book, paperboard, wrapping, bag, writing, tissue, hanging and building papers. Compared with February, 1931, newsprint and writing papers were the only grades whose daily average production showed an increase. Total shipments of all major grades decreased 16% during the first three months of 1931 as compared with the first three months of 1930.

Identical pulp mill reports for the first quarter of 1931 indicated that the total pulp consumed by reporting mills was 19% less than for the first quarter of 1930, while total shipments to the open market during the first quarter were also sharply below the total for the same period of 1930.

All grades of pulp, excepting groundwood, bleached, easy bleaching sulphite, kraft and soda pulps, registered decreases in inventory at the end of March, 1931, as against the end of February, 1931. As compared with March, 1930, groundwood, news grade sulphite, easy bleaching sulphite, kraft and soda pulp registered decreases in inventory.

REPORT OF PAPER OPERATIONS IN IDENTICAL MILLS FOR THE MONTH OF MARCH, 1931

GRADE:	Production Tons	Shipments Tons	Stocks on Hand End of Month—Tons
Newsprint	100,590	101,044	32,254
Book (Uncoated)	78,599	78,429	47,689-R
Paperboard	177,542	177,222	67,986
Wrapping	44,159	44,557	48,820
Bag	9,484	9,501	7,016
Writing, etc.	28,372	27,080	50,373
Tissue	5,626	5,291	3,548
Hanging	3,204	3,670	3,981
Building	4,966	4,935	3,071
Other Grades	16,393	16,730	14,960
Total—All Grades	468,935	468,459	279,698

R—Revised.

REPORT OF WOOD PULP OPERATIONS IN IDENTICAL MILLS FOR THE MONTH OF MARCH, 1931

GRADE:	Production Tons	Used During month—Tons	Shipped During Month—Tons	Stocks on Hand End of Month—Tons
Groundwood	75,154	70,383	1,912	48,190
Sulphite News Grade	29,331	28,260	1,466	5,203
Sulphite Bleached	20,800	18,865	1,907	3,343
Sulphite Easy Bleaching	2,428	2,239	156	657
Sulphite Mitscherlich	6,961	5,917	1,087	1,489
Kraft Pulp	26,150	21,831	4,272	8,054
Soda Pulp	19,013	14,390	4,384	3,172
Pulp—Other Grades	594	468	124	355
Total—All Grades	180,431	162,353	15,308	70,463

Canadian Exports of Pulp and Paper April, 1931

Canadian exports of pulp and paper in April were valued at $10,771,452 according to the report issued by the Canadian Pulp and Paper Association. This was a decrease of $4,134,823 from the previous month.

Wood-pulp exports for the month were valued at $2,168,682 and exports of paper at $8,602,770 as compared with $3,367,236 and $11,639,039 respectively in the month of March.

Details for the various grades of pulp and paper are as follows:

	April, 1931		April, 1930	
PULP:	Tons	Dollars	Tons	Dollars
Mechanical	13,084	384,900	7,717	216,190
Sulphite Bleached	15,401	977,704	18,205	1,340,788
Sulphite Unbleached	10,253	445,224	14,646	718,391
Sulphate	5,018	318,876	5,352	312,165
Screenings	1,191	20,922	1,349	22,566
All Other	407	21,056	353	21,022
	45,353	2,168,682	47,622	2,631,122
PAPER:				
Newsprint	152,360	8,329,722	159,802	9,199,882
Wrapping	543	50,995	1,298	136,301
Book (cwts.)	1,556	12,191	3,011	28,690
Writing (cwts.)	458	3,724	278	2,074
All Other	.....	206,138	.....	201,125
		8,602,770		9,568,072

For the first four months of the year the exports of pulp and paper were valued at $48,002,225. In the corresponding months of 1930 the value was $59,919,763 so that there has been a decrease this year of $11,917,538.

Details for the various grades are given below:

	4 Mos., 1931		4 Mos., 1930	
PULP:	Tons	Dollars	Tons	Dollars
Mechanical	53,169	1,594,962	62,957	1,852,451
Sulphite Bleached	77,049	5,053,593	97,246	7,249,267
Sulphite Unbleached	45,848	2,027,067	70,388	3,504,462
Sulphate	23,493	1,519,636	35,818	2,037,441
All Other	6,696	170,383	9,236	182,750
	206,255	10,365,641	275,645	14,826,371
PAPER:				
Newsprint	650,503	36,258,250	748,031	43,146,636
Wrapping	3,713	350,820	4,996	527,410
Book (cwts.)	7,420	64,146	14,378	135,657
Writing (cwts.)	1,238	11,618	753	6,913
All Other	.....	951,750	.....	1,276,776
		37,636,584		45,093,392

Pulpwood exports for the first four months of this year were 259,185 cords valued at $2,320,372 as compared with 447,079 cords valued at $4,106,830 in the corresponding months of last year.

B. C.'s Timber Stand

The mature stand of spruce in British Columbia is estimated at approximately 3,000,000,000 feet, according to a new check recently completed by the provincial government. The average cut per year totals 40,000,000 feet.

"We are not so much worried about our pulpwood stands as we are about Douglas fir and cedar," stated Hon. Nels Lougheed, minister of lands, who pointed out that the estimate of available trees of the latter species gave reason for some alarm.

"The great Douglas fir forests of the coastal region will be all cut, at the present rate of cutting, in less than 20 years. The re-growth of timber in the whole province is not 5,000,000,000 feet as has been persistently stated, but only 400,000,000 feet useful for lumber manufacture, or only one fifth of the amount cut. At the present rate of cutting cedar will last for 50 or 60 years and hemlock 90 to 100 years.

"To save Douglas fir the province must push the sale of other woods, and artificial re-seeding over wide areas must be undertaken."

PULP

PERKINS-GOODWIN CO.

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PAPER

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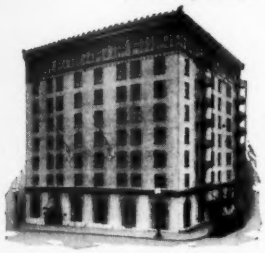
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North American News Print Production—April, 1931

The News Print Service Bureau, Bulletin No. 160, states that production of news print paper in Canada during April, 1931, amounted to 205,838 tons and shipments to 205,752 tons. Production in the United States was 102,450 tons and shipments 101,819 tons, making a total United States and Canadian news print production of 308,288 tons and shipments of 307,571 tons. During April, 23,016 tons of news print were made in Newfoundland and 1,165 tons in Mexico, so that the total North American production for the month amounted to 332,469 tons.

The Canadian mills produced 92,733 tons less the first four months of 1931 than in the first four months of 1930, which was a decrease of 11 per cent. The output in the United States was 66,599 tons, or 14 per cent less than for the first four months of 1930. Production in Newfoundland was 4,206 tons or 5 per cent more in the first four months of 1931 than in 1930 and in Mexico 1,723 tons less, making a continental decrease of 156,849 tons or 11 per cent.

During April the Canadian mills operated at 64.0 per cent of rated capacity, United States mills at 69.6 per cent, Newfoundland mills at 90.9 per cent and Mexican mills at 63.1 per cent, making a continental average of 67.0 per cent. Stocks of news print paper at Canadian mills totalled 39,754 tons at the end of April and at United States mills 34,289 tons, making a combined total of 74,043 tons which was equivalent to 4.1 days' average production.

NORTH AMERICAN PRODUCTION

	Canada	United States	Newfoundl'nd	Mexico	Total
1931—April	205,838	102,450	23,016	1,165	332,469
Four Months	740,118	393,148	95,318	5,025	1,233,609
1930—Four Months	832,851	459,747	91,112	6,748	1,390,458
1929—Four Months	840,565	460,719	80,557	6,382	1,388,223
1928—Four Months	764,901	471,062	72,333	5,024	1,313,320
[illegible]—Four Months	654,264	518,447	66,218	4,744	1,243,673
[illegible]—Four Months	581,183	560,846	55,233	4,081	1,201,343
1925—Four Months	492,945	504,643	20,942	4,167	1,022,697
1924—Four Months	452,322	500,464	21,576	3,832	978,194

IMPORTS OF PULP WOOD AND WOOD PULP INTO THE UNITED STATES BY COUNTRIES AND CUSTOMS DISTRICTS

March, 1931

Compiled by the U. S. Department of Commerce, Bureau of Foreign and Domestic Commerce
(Figures Subject to Revision.)

PULP WOODS

	Rough				Peeled				Rossed			
	Spruce		Other		Spruce		Other		Spruce		Other	
	Cords	Dollars	Cords	Dollars	Cords	Dollars	Cords	Dollars	Cords	Dollars	Cords	Dollars
COUNTRIES—												
Canada	68	731	.....	.....	33,379	365,993	18,050	150,581	399	4,416	.....	.....
Total	68	731	.....	.....	33,379	365,993	18,050	150,581	399	4,416	.....	.....

Total Imports of Pulpwood, March, 1931 - - 51,886 cords; $521,721.

WOOD PULP

	Mechanically Ground Unbleached		Mechanically Ground Bleached		Chemical Unbleached Sulphite		Chemical Bleached Sulphite		Chemical Unbleached Sulphate		Chemical Bleached Sulphate		Soda Pulp, Unbleached and Bleached	
	Tons	Dollars	Tons	Dollars	Tons	Dollars	Tons	Dollars	Tons	Dollars	Tons	Dollars	Tons	Dollars
COUNTRIES—														
Czechoslovaki	.....	.....	.....	.....	123	4,831	353	19,702	.....	.....	.....	.....	.....	.....
Estonia	.....	.....	.....	.....	1,195	47,916	.....	.....	.....	.....	.....	.....	.....	.....
Finland	758	18,217	77	1,737	8,114	353,628	1,299	70,988	1,902	62,547	144	7,376	.....	.....
Germany	.....	.....	.....	.....	939	42,726	5,938	374,866	.....	.....	49	2,553	.....	.....
Lithuania	.....	.....	.....	.....	105	4,548	.....	.....	.....	.....	.....	.....	.....	.....
Norway	.....	.....	100	2,326	2,674	96,940	4,320	262,798	400	15,335	25	1,479	.....	.....
Poland and Danzig	.....	.....	.....	.....	100	3,446	.....	.....	224	6,159	.....	.....	.....	.....
Sweden	191	3,854	21	558	5,450	263,654	1,852	111,696	4,018	147,681	48	2,531	.....	.....
Yugo. and Albania	.....	.....	.....	.....	872	41,677	.....	.....	.....	.....	.....	.....	.....	.....
Canada	11,935	277,270	.....	.....	11,043	493,955	15,580	1,044,867	3,001	190,129	2,778	256,153	362	18,504
Total	12,884	299,341	198	4,621	30,615	1,353,321	29,342	1,884,917	9,545	421,851	3,044	270,092	362	18,504
CUSTOMS DISTRICT—														
Maine and New Hampshire	2,211	66,926	.....	.....	3,058	145,612	4,486	285,804	51	1,820	.....	.....	.....	.....
Vermont	700	19,125	.....	.....	827	37,436	788	47,847	2,595	170,530	2,699	250,484	192	8,938
Massachusetts	100	2,135	21	558	3,955	197,450	4,460	291,798	476	13,493	144	7,376	.....	.....
St. Lawrence	1,376	38,766	.....	.....	880	44,364	2,264	153,234	296	16,319	29	1,503	81	4,924
Rochester	173	5,239	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Buffalo	741	18,323	.....	.....	3,909	152,383	939	78,976	.....	.....	.....	.....	.....	.....
New York	3,025	41,182	77	1,737	5,925	244,089	1,596	100,415	2,939	106,701	.....	.....	.....	.....
Philadelphia	76	1,380	100	2,326	4,994	211,583	3,739	223,381	.....	.....	25	1,479	.....	.....
Maryland	758	18,217	.....	.....	2,260	103,671	2,467	134,298	1,173	38,821	48	2,531	.....	.....
Virginia	.....	.....	.....	.....	3,172	162,291	720	46,298	1,705	65,447	49	2,553	.....	.....
Mobile	.....	.....	.....	.....	24	1,380	.....	.....	.....	.....	.....	.....	.....	.....
New Orleans	.....	.....	.....	.....	.....	.....	280	16,485	.....	.....	.....	.....	.....	.....
Los Angeles	.....	.....	.....	.....	.....	.....	.....	.....	200	5,440	.....	.....	.....	.....
San Francisco	.....	.....	.....	.....	35	873	.....	.....	61	1,291	.....	.....	.....	.....
Washington	127	3,684	.....	.....	183	5,189	.....	.....	.....	.....	.....	.....	.....	.....
Dakota	.....	.....	.....	.....	.....	.....	237	12,492	49	1,989	.....	.....	.....	.....
Duluth and Superior	723	13,664	.....	.....	164	2,737	.....	.....	.....	.....	.....	.....	.....	.....
Michigan	2,864	70,700	.....	.....	1,229	44,263	7,366	493,889	.....	.....	50	4,166	89	4,642
Total	12,884	299,341	198	4,621	30,615	1,353,321	29,342	1,884,917	9,545	421,851	3,044	270,092	362	18,504

Total—All Grades of Wood Pulp, March, 1931 - - 85,990 tons; $4,252,647.

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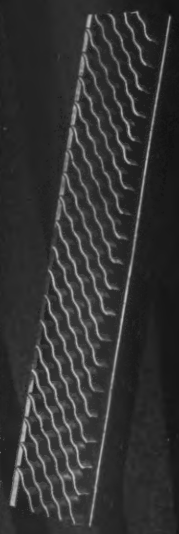
SWW

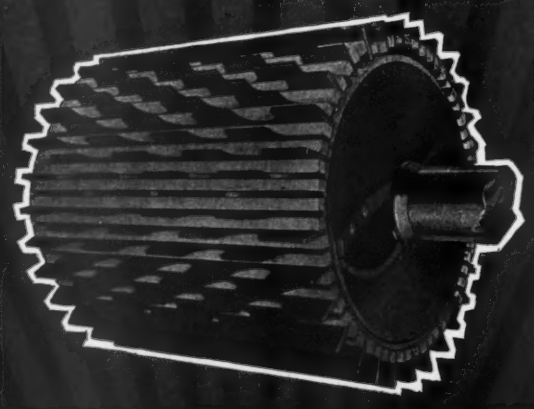
No matter what your beating condition, you can obtain an SWW Bar or Bed Plate that will give the results you desire.

SWW Bed Plates are available in several different types. Permit faster circulation, better hydration, and lessen liability of burning stock.

SWW Bars are made in several types. The SWW Staggered Bar increases and strengthens circulation — provides better stock in far less time. The SWW Corrugated Bar offers all the advantages of the ordinary bar and is much stronger.

SWW also make better straight bars, acid resisting bars, paper trimming and chipper knives, etc.





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Exacting box manufacturers find that boxboard colored with these National Dyes meets all reasonable requirements of light fastness and resistance to alkali (silicate of soda).

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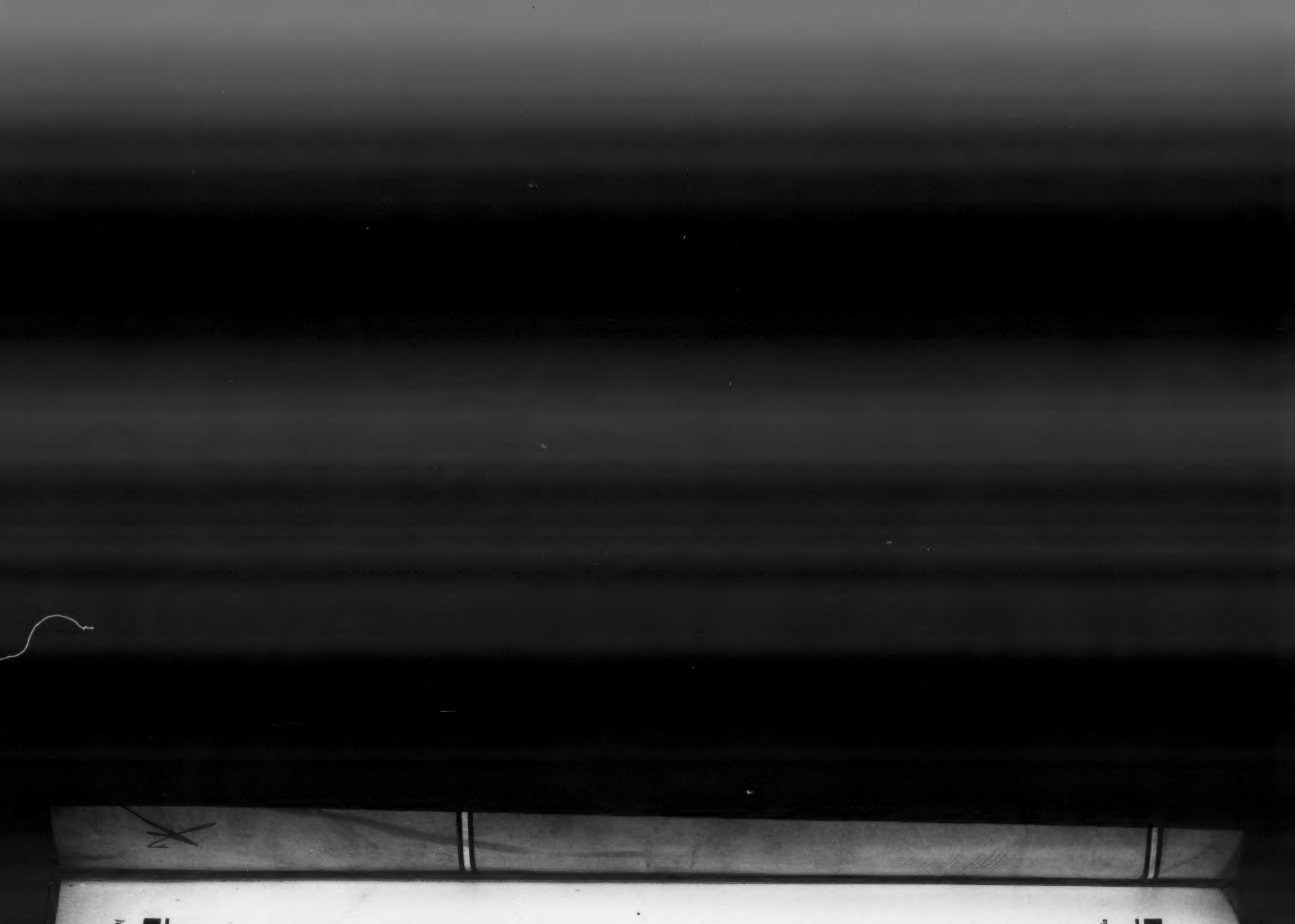
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